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AN EVALUATION STUDY OF THE COLLEGE FACILITIES PROGRAM. FINAL REPORT.

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IMPACT, EFFECTIVENESS, AND RESULTS OF THE HIGHER EDUCATION FACILITIES ACT OF 1963 ARE EVALUATED. DATA FOR FY 65 AND FY 66 ON THE NUMBER OF APPLICANTS OF FEDERAL AID, CAPITAL OUTLAY FOR FY 63 AND FY 64, UNDERGRADUATE TUITION AND FEES, AND INFORMATION FROM REPRESENTATIVES OF 43 INSTITUTIONS AND NINE STATE COMMISSIONS ARE UTILIZED. CONCLUSIONS REPORTED ARE--(1) THE COLLEGE FACILITIES PROGRAMS HAVE CONTRIBUTED SIGNIFICANTLY TO ACCOMODATING INCREASING ENROLLMENTS, (2) FEDERAL FUNDS HAVE SUPPLEMENTED MONIES FROM NON-FEDERAL SOURCES TO INCREASE AVAILABILITY OF PHYSICAL FACILITIES, (3) PUBLIC INSTITUTIONS HAVE BENEFITED MOST FROM TITLE I AND II FUNDS, WHILE PRIVATE INSTITUTIONS HAVE BENEFITED MORE FROM TITLE III FUNDS, (4) DATA AVAILABLE CLEARLY REVEALS AN INCREASE IN THE CAPACITY ENROLLMENT RATIO FOR ALL INSTITUTIONS WHILE THE ONLY TYPE OF INSTITUTION WITH A REDUCTION IN RATIO WAS THE UNIVERSITY GROUP, (5) THE FACILITIES ACT HAS HAD A FAVORABLE IMPACT ON THE ACADEMIC PROGRAMS OF PARTICIPATING INSTITUTIONS, (6) DATA REGARDING THE IMPACT OF THE PROGRAM ON UNDERGRADUATE TUITION AND FEES REVEALS NO SIGNIFICANT RELATIONS, AND (7) PARTICIPATING INSTITUTIONS GENERALLY HAVE REACTED FAVORABLY TO THE FACILITIES PROGRAMS. THE PROGRAM HAS STIMULATED FUND RAISING, PARTIALLY SATISFIED THE GROWING NEEDS FOR EXPANDED FACILITIES, ENCOURAGED BETTER PLANNING, AND ENHANCED PROGRAM IMPROVEMENTS. (BH)

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July, 1967

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

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FOREWORD

This Report presents the findings and conclusions with regard to the Study of the impact of the College Facilities Program on the programs of participating higher education institutions. Institutions have been included in this Study which received assistance during FY 65 and FY 66 under the Higher Education Facilities Act of 1963. All of the data collected and processed in this Study have not been used in the development of this Report. Numerous additional facets of the program could be explored with the data that have been collected and processed. However, it must be clearly understood that the best possible results have been obtained within the limits of time available to the investigators.

Several significant findings in this work suggest the need for additional exploratory studies that would further extend the knowledge about the effectiveness of the College Facilities Program. This Study leaves no doubt about the program's overall effectiveness. However, more study in depth is needed to determine the additional steps that can be taken to maximize the potential benefits of the College Facilities Program.

ACKNOWLEDGEMENTS

This study is the result of team effort. The principal investigator is indebted to many persons without whose assistance, this report would not have been possible.

Dr. D. Grant Morrison and Dr. Howard A. Dawson of the Associated Consultants in Education, Inc. of Tallahassee, Florida and Dr. William S. Fuller, Director, Higher Education and Facilities, State Department of Education, Albany, New York, along with the principal investigator, are credited with the joint authorship of this Study. Assisting in the data gathering process and in the processing of raw data were Dr. Alan Jones and Mr. Fred Williams. Both are Research Associates employed by The Associated Consultants in Education, Inc. Mr. Williams has been of immeasurable assistance in the final production of the Report.

The special and significant contributions of the Florida State University Computing Center and its Director, Dr. E. P. Miles are acknowledged. Special mention is made of Chief Programmer, Mr. John Nall and his assistants for their persistent and untiring efforts on behalf of the Study.

The contributions of statistical and clerical assistants employed by The Associated Consultants in Education, Inc. are also acknowledged. The hard work, patience, and persistent efforts of Mrs. Anne Lassiter, Mrs. Prudy DeLuisi, Miss Linda Starling, and Miss Marsha Bachemin deserve the highest of praise.

The assistance of the several institutions interviewed by telephone is also acknowledged. Appreciation is likewise expressed to the representatives from the State Commissions of Massachusetts, New York, Maryland, Florida, Ohio, Minnesota, Arkansas, Colorado, and California for their time and assistance with the personal interviews.

The Associated Consultants in Education, Inc. has produced this Report on behalf of Florida State University by contract. Without the facilities and the know-how of this firm, this report could not have been produced in the time allotted.

Finally, the patient and consistent support of Dr. Russell J. Keirs, Associate Dean of the Graduate School, Florida State University, is gratefully acknowledged.

C. W. McGuffey
Principal Investigator

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I

BACKGROUND OF THE STUDY

Purpose of the Study

The purpose of this study is to determine how effective the Higher Education Facilities Program has been in accomplishing the major objectives specified in the legislation which established it. Major considerations of the study include:

1. The effect of the academic facilities program on the availability and utilization of facilities to accommodate the increasing numbers of students qualifying for and desiring higher education.
2. The distribution of funds by type of institution, the accommodation of increasing enrollments, the effects on other institutional funds and on facility utilization and the effect that the facility construction may have had on academic programs.

More specifically, answers to the following questions have been sought in determining the extent to which legislative objectives have been accomplished:

1. Is the College Facilities Program reaching its objectives of providing more space to handle increasing enrollments?
2. Is the College Facilities Program supplementing other funds available for the construction of facilities?
3. How are funds under the College Facilities Program being distributed with respect to type and size of institution and by geographical location?
4. What effects, if any, has the facilities program had upon the utilization of academic facilities?
5. Has the facilities program affected the academic programs of participating institutions in any identifiable

way?

6. Has the facilities program had any effect upon standard undergraduate tuition and fees of participating institutions?
7. How have participating institutions received the facilities program?

Procedures Used

Procedures used in making this study are outlined in the following steps:

1. A conference was held in Washington, D. C. to discuss detailed implications of the major questions posed in the study. At this point, preliminary table shells were prepared by the Study Staff for outlining the output data.
2. Simultaneously, attempts were made to locate possible sources of the input data required for analysis in the study.
3. Computer coding instructions on names and types of higher education institutions, their control, states, OE regions, sizes of institutions, and similar information used by USOE were located and programmed for use in the study.
4. Data on higher education capital outlay on expenditures for the fiscal years 1962-63 through 1963-64 were obtained from information compiled for the Robbins Study and programmed for use in this project.
5. Final table shells were designed to receive required output data for analysis.
6. An intermediate data collection form was prepared to receive required input data. The data collection form was designed for key punch.
7. Data available in the Title I, II and III application files in the USOE were transcribed by hand to the intermediate data collection forms by clerical help supervised by a professional member of the Study Staff. The itemized list of grants and/or loans awarded under the program act for June 30, 1965 and June 30, 1966 were

used as master check lists to reduce the number of case losses during the data gathering process.

8. Intermediate data collection forms were completed, checked, and mailed to Tallahassee where additional data on location, tuition and fees and state, region and institution codes were added to the forms. Cards were then punched using the data from the data collection forms.

9. A computer program was written to compile and process the data and to print out completed tables of data for study analysis.

10. A computer program was written to select a random sample of institutions in the universe of institutions being used in the Study. Two separate five per cent samples were selected by the control data 6400 computer. The program was asked to select 45 random numbers between 1 and 888, no two of which were alike. The program was then cycled until a five per cent sample of random numbers was selected, accumulated and ordered in ascending order. The second part of the program took the random numbers chosen in the first part of the tape, searched for corresponding number positions on the data tape which included the universe of the institutions and printed the names and addresses of the first sample of institutions. A second sample of five per cent was selected in a similar manner. This procedure yielded a sample of 87 institutions.

11. A letter was sent to each of the 87 institutions in the sample to inquire as to their willingness to submit to a telephone interview to discuss a predetermined set of questions related to the purposes of the study. Forty-three institutions responded affirmatively and 43 telephone interviews were conducted and their results tabulated.

12. Personal interviews were conducted with personnel in nine State Commission offices by study staff personnel. The State Commissions on the interview list were arbitrarily selected to include one from each OE region. Florida, Massachusetts, New York, Maryland, Ohio, Minnesota, Arkansas, Colorado and California were the states selected.

13. In the process of collecting data about the institutions receiving grants and/or loans, it was discovered that

data were incomplete for many institutions. Consequently, special edit requirements were prepared and included in the program for processing the data. These edit requirements caused the omission of many institutions for which data were incomplete.

14. Study staff members analyzed the processed data and prepared a preliminary report.
15. A final meeting was held to review preliminary drafts of the report and to agree on the findings and recommendations of the study.
16. The final report was prepared.

Sources of Data

The following are the data sources used in making the study:

1. USOE file of applications for grants under Title I supplied basic information on the amount of the grants, enrollment data, assignable space and cost of facilities.
2. USOE file of applications for loans under Title III provided data on loans to institutions.
3. USOE file of applications for grants under Title II supplied information on the amount of Title II grants and the cost of facilities proposed for construction.
4. Capital expenditures data for 1962-1963 and 1963-1964 fiscal years were taken from the survey by Robbins.
5. Status reports about Titles I, II and III for fiscal years 1965 and 1966 provided data to check applications for completeness.
6. College Facts Chart, National Beta Club, Spartanburg, South Carolina, 1964/1967 provided information on tuition and student charges.
7. Telephone interviews with persons from a random sample of 43 institutions provided information on how each institution's total program was affected by the college facilities program.
8. Personal interviews were held with representatives of nine state commissions selected from the nine OE regions to determine the impact of the program on institutions in their states.
9. LSMSA and SMSA data were taken from the Statistical

state commissions selected from the nine OE regions to determine the impact of the program on institutions in their states.

9. LSMSA and SMSA data were taken from the Statistical Abstract of the United States, 1966 for use as a location factor.
10. Various code designations such as those for state, OE region, institution, type of institution, size of institution and institution control were taken from the USOE Student Aid Universe and from the USOE Data Universe.

The Universe of Institutions

A total of 986 institutions and branch campuses are included in this study. Not all data about each of the 986 institutions and campuses are included in each table. In certain tables, the computer edit requirements excluded institutions for which no data or incomplete data were available about those institutions.

The information contained in Table 1.1 indicates the degree of completeness of the data included in this study. Only those applications submitted during the 1965 and 1966 fiscal years are included in the study. Data forms were completed for 94.2 per cent of the applications on file in the U. S. Office of Education.

TABLE 1.1

TOTAL NUMBER OF APPLICATIONS SUBMITTED TO USOE AND THE NUMBER INCLUDED IN THE STUDY - 1965 AND 1966 FISCAL YEARS

Title	No. of Applications to USOE	No. of Data Forms Completed for the Study	Percentage of Total Applications Included in Study
I	1483[a]	1387	93.5
II (only)	145	145	100.0
III (only)	15	15	100.0
Totals	1643	1547	94.2

[a] Statistics from June, 1965 and June, 1966, Annual Report of Title I of PL 88-204. Many of these applications also had Title II and Title III approval information.

Limitations of the Study

An attempt was made to include all applications submitted to the U. S. Office of Education during the 1965 and 1966 fiscal years. However, due to the fact that many application files were being used by USOE personnel at the time of the data gathering phase, some applications could not be located. For this reason, data from only 94.2 percent of the applications were included in the study.

Data needed to answer the major questions being studied had to be obtained from several unrelated sources. In many instances, the sources used did not provide complete information on the 986 institutions included. Consequently, not all institutions are included in each separate analysis made of the available data.

Title II applications provided only limited data useful in this study. As a matter of fact, only data on the purpose of and the amount of the grant made to an institution, the cost of facilities to which the grant was to be applied and the amount of assignable instructional and library space were available. Consequently, Title II applications were of limited value in the overall study.

Data on capital expenditures taken from the Robbins study were incomplete for the institutions included here. Consequently, the number of cases for which comparisons of capital expenditures could be made were less than half of those included in this study.

Time has been a critical limiting factor. Within the time available as thorough an analysis as possible was made. A larger number of institutions could have been included in the interviews. More careful checks could have been made to ascertain that key punch and computer errors were altogether eliminated. Stricter computer edit requirements could have been developed to assure a more consistent processing of appropriate data for a larger number of institutions.

The investigators believe, however, that the final results are valid and that the findings are in fact representative of the situation as it existed at the time of the study.

A Review of College Facilities Legislation

In the 86th Congress, President Eisenhower recommended that financial assistance be given for the construction of the nation's higher education facilities. President Kennedy similarly recommended higher education facilities. President Kennedy similarly recommended such federal assistance in both the 87th and 88th Congresses. On January 29, 1963 President Kennedy pointed up the urgency of the need for such assistance in the following words. "The long-predicted crisis in higher education facilities is now at hand . . . Even now it is too late to provide these facilities to meet the sharp increases in college enrollments expected during the next two years. Further delay will aggravate an already critical situation." The 88th Congress responded to this challenge by passing the Higher Education Facilities Act of 1963, Public Law 88-204.

Purpose of the Legislation

The rapid growth in the nation's college-age population has confronted institutions of higher education with an urgent need to expand their classroom capacity. The purpose of the Act was to assist the nation's institutions of higher education to construct needed classrooms, laboratories, and libraries in order to accommodate mounting student enrollments and to meet demands for skilled technicians and for advanced graduate education.

The Urgent Need for This Legislation

In the testimony presented to the Senate Committee on Labor and Public Welfare and to the House Committee on Education and Labor, hundreds of college and university officials documented the extreme need for this assistance. A very brief summary of some of the salient points is given below.

1. The Bureau of Census reported that the population of young people aged 18-22 rose from 11,784,000 in July, 1960 to 13,044,000 in 1962. The Bureau's estimate for the remainder of this decade showed the following increases in the population in this age group:

1963	13,512,000
1964	13,884,000
1965	15,019,000
1966	15,605,000
1967	16,353,000

1968	17,064,000
1969	17,878,000
1970	17,806,000

2. Projected increases due to larger volume of college-age population and the increasing proportion of high school graduates continuing their education were emphasized.
3. Enrollments were predicted to reach 5.2 million students by 1965 and 7 million by 1970 which would be an increase of 94 per cent in student enrollment in colleges and universities between 1960 and 1970.
4. The need for additional facilities far exceeds the available college resources.
5. The following are brief excerpts of testimony presented to the Committee on Education and Labor.
   (a) The Honorable Anthony J. Celebrezze, Secretary of Health, Education and Welfare, "To provide for additional students, replace obsolete structures, and modernize usable buildings, institutions of higher education should invest an average of 2.3 billion annually. Expenditures currently fall short of this by one billion annually." (page 67 of Hearings)
   (b) Former Secretary Arthur S. Flemming in testimony before the Committee in the 87th Congress stated, "A program of matching grants for academic facilities available to both public and private colleges, is a 'must' if our colleges and universities are going to provide both undergraduate and graduate students with adequate educational opportunities."
   (c) Dr. Mason Gross, President of Rutgers, the State University in New Jersey said, "The predictable enrollment increase is an irreducible factor. We cannot will these young men and women away.

   For the first time in history, American higher education is faced with the possibility that it will have to deny an opportunity for higher education to some young men and women simply because there is no place for them in our existing academic institutions."

(d) The junior colleges have absorbed much of the increase in student enrollments in recent years and may be expected to assume an even greater share in the years ahead. Junior college enrollments in 1962 showed a 13.7 per cent increase over 1961 compared with the overall increase of 8.1 per cent for all higher educational institutions. The Committee received testimony that expansion of these two-year institutions would place additional post-high school opportunities within reach of thousands of our nation's youth.

(e) There have been studies indicating that the likelihood of going to college is 50 per cent greater for a high school graduate who lives within 20-25 miles of a college than for the graduate who lives beyond commuting distance.

Assistance Provided By the Legislation

Three basic types of assistance were provided:

1. A program of matching grants for construction, rehabilitation, or improvement of needed undergraduate academic facilities, with a specific per cent of the funds reserved for facilities for junior colleges and technical institutes.
2. A program of matching construction grants for the establishment or improvement of graduate schools or of cooperative graduate centers created by two or more higher education institutions.
3. Loans to higher education institutions for the construction, rehabilitation, or improvement of academic facilities.

Authorizations and Appropriations

Table 1.2 which follows provides information on the authorizations and appropriations of funds for the program for the years 1964 through 1967.

TABLE 1.2

AUTHORIZATIONS AND APPROPRIATIONS
(In Thousands)

Title and Year		Authorization	Appropriation
I	1964	$230,000	$ -0-
	1965	230,000	230,000
	1966	460,000	458,000
	1967	475,000	453,000
II	1964	25,000	-0-
	1965	60,000	60,000
	1966	120,000	60,000
	1967	60,000	60,000
III	1964	120,000	-0-
	1965	120,000	169,250[a]
	1966	120,000	110,000
	1967	200,000	200,000

[a] $49,250 represents an appropriation from FY 1964 carry-over authorization.

The Administration of the Titles

For Title I, the state commissions as provided in the Act had the responsibility for developing a state plan for the administration of the funds, for determining priorities and computing the federal share of each approved project.

For Title II, the allotments were made by the Commissioner of Education with the advice of the Advisory Council on graduate education.

For Title III, the loan funds were allocated by the Commissioner of Education.

II

THE IMPACT OF THE HIGHER EDUCATION FACILITIES ACT OF 1963, TITLES I, II AND III ON COLLEGE ENROLLMENT AND POTENTIAL ENROLLMENT IN COLLEGES IN THE UNITED STATES

Introduction

The major purpose of this section is to examine the effect that the Higher Education Facilities Act had on ability of higher education institutions to accommodate increasing enrollments. It will be recalled that in the debates in the House and the Senate prior to the passage of the Higher Education Facilities Act, the stated objective of the Act was to increase the availability of a college education in the United States. Accordingly, it seems most appropriate to consider first the effect that the Act has actually had in accomplishing this objective.

A second purpose is to explore the increase in assignable space for instruction and library and to evaluate the relationship between enrollment increase and the increase in assignable space.

The data used in this section were secured primarily from the approved applications for grants and loans for FY 65 and FY 66 on file in the U. S. Office of Education.

Assumptions and Hypotheses

The following assumptions have special relevance to this section:

1. It is assumed that even if the Higher Education Facilities Act had not passed, institutions would have been able to accommodate some increases in the enrollments and would have provided additional assignable space.
2. It is assumed that the passage of the Act made available funds that otherwise could not have been secured. Thus,

the part of the facility constructed with these federal funds would likely not have been completed--certainly not as soon.

3. It is assumed unlikely that all types of higher educational institutions were effected in the same way and to the same degree. Accordingly, an examination was made of enrollment increases and assignable space increases by type of institution, by control of institution, by size of institution, and by the regional and SMSA identification.
4. As some of the federal funds from this Act were used solely for rehabilitation, the assumption is made that not all institutions increased their enrollment capacities; therefore, it is possible that in some cases, the enrollment capacity was decreased.

The data are examined in light of these four assumptions.

Analysis of Tables

Table 2.1 shows the percentage increase in full-time equivalent (FTE) students for each one per cent increase in assignable area. To accomplish this, the increase and percentage increases in assignable area in instruction and library were computed by region, state and SMSA. This first table was devoted to 81 projects for rehabilitation occuring in eighteen LSMSA, 21 SMSA and 42 other regions.

The considerable regional variations in the percentage increase in FTE enrollments for each one per cent of increase in assignable space in rehabilitation projects was not as great as the variations among states. For example, one state in Region 3 had an index of .04 and one state in Region 7 had 186.77. Although each of these states had two rehabilitation projects, the increases in both enrollment and assignable space were too small to appreciably influence the regional totals. The total for all regions was 1.42. The index for the SMSA was 4.27 which was five times the index in LSMSA and over three times as large as the index for areas outside either the LSMSA or SMSA.

Table 2.2 shows data which are similar to that found in Table 2.1 except that it deals with new construction only.

TABLE 2.1

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS. . . . REHABILITATION BY OFFICE OF EDUCATION REGIONS, AND BY SMSA

O.E. REGION SMSA	NUMBER OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGNABLE AREA	INCREASE IN FTE ENROLLMENT	%AGE INCREASE FTE ENROLLMENT	%AGE INCREASE IN FTE FOR EACH 1 % INCR. IN ASSIGNABLE AREA
Region 1	4	616,842	158.44	16,484	100.20	.63
Region 2	11	330,700	36.51	6,323	22.18	.61
Region 3	10	514,348	144.33	5,123	22.93	.16
Region 4	6	409,397	59.49	16,953	162.18	2.73
Region 5	18	380,962	9.69	55,863	87.41	9.02
Region 6	8	144,169	53.35	1,221	17.03	.32
Region 7	10	1,762,428	130.36	27,855	62.92	.48
Region 8	5	100,227	6.92	4,610	23.59	3.41
Region 9	9	225,561	8.68	7,888	14.44	1.66
LSMSA	18	401,849	21.18	12,600	17.06	.81
SMSA	21	546,967	13.07	45,757	55.77	4.27
OTHER	42	3,535,818	60.35	83,963	75.38	1.25
All Regions	81	4,484,634	37.56	142,320	53.25	1.42

TABLE 2.2

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . .. NEW CONSTRUCTION BY OFFICE OF EDUCATION REGIONS, AND BY SMSA

OE Region SMSA	Number of Institutions and Branch Campuses	Increase in Assignable Area (L+I)	%age Increase Assignable Area	Increase in FTE Enroll- ment	%age Increase FTE En- rollment	%age Increase in FTE for Each 1% Inc. in Assignable Area
Region 1	74	5,378,365	100.07	50,906	40.69	.41
Region 2	115	10,432,904	132.23	111,747	43.44	.33
Region 3	114	7,589,547	69.27	96,291	36.10	.52
Region 4	110	12,160,907	184.82	117,361	44.69	.24
Region 5	129	24,050,576	163.76	349,567	68.23	.42
Region 6	101	9,842,523	98.34	126,489	46.26	.47
Region 7	90	9,213,115	81.87	132,270	43.91	.54
Region 8	33	2,629,338	65.32	22,661	21.97	.34
Region 9	93	12,814,365	114.79	171,046	48.65	.42
LSMSA	130	16,435,563	111.52	210,642	38.52	.35
SMSA	239	26,423,794	113.54	313,870	47.02	.41
Other	490	51,252,283	116.67	653,826	52.77	.45
All Regions	859	94,111,640	114.86	1,178,338	48.03	.42

The regional variations in the percentage increase in FTE enrollments for each one per cent increase in assignable space are much less in Table 2.2 than in 2.1. There are many other differences between the two tables especially in the number of projects, the increase in assignable space, and the increase in enrollment. An examination of Tables 2.1 and 2.2 reveals that the percentage increase in FTE enrollment for each one per cent in increase of assignable space in new construction is less than one third as much as it is for rehabilitation projects. A more meaningful comparison, however, is that the new construction projects are ten times as numerous as the rehabilitation projects and the increase in assignable space for each project is over twice the figure for each rehabilitation project.

Table 2.3 includes a tabulation of increases in enrollment and in assignable areas due to Titles I, II and III projects including both rehabilitation and new construction. The data relate only to those approved grants and loans which jointly were consisted of both rehabilitation and new construction.

The total number of institutions or campuses included in Table 2.3 is twice the number of the rehabilitation projects only and less than 19 per cent of the number of new construction only.

The regional differences and the state differences are great, but generally do not approximate those found in Table 2.1. The percentage increase in enrollment for each one percentage increase in assignable area averages 1.6 which is higher than the amount in either of the previous tables. Region 6 has the largest index--over three times the average for all regions, but has the second smallest percentage increase of assignable space.

Table 2.4 is a tabulation of projects dealing with rehabilitation only, new construction only, and joint projects including both new construction and rehabilitation. The number of institutions and campuses will not total 1102 as shown in Tables 2.1, 2.2 and 2.3. The reason is that the same institution may have received two types of grants and/or grants and loans, one in each of the categories covered in 2.1, 2.2 and 2.3. More likely is the situation where two categories are covered in different projects; thus the total number of institutions or campuses is 986 and

TABLE 2.3

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . JOINT NEW CONSTRUCTION AND REHABILITATION BY OFFICE OF EDUCATION REGIONS, AND BY SMSA

O.E. REGION SMSA	NUMBER OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGNABLE AREA	INCREASE IN FTE ENROLLMENT	%AGE INCREASE FTE ENROLLMENT	%AGE INCREASE IN FTE FOR EACH 1 % INCR. IN ASSIGNABLE AREA
Region 1	5	315,500	31.31	9,764	57.68	1.84
Region 2	29	2,334,231	78.14	37,542	56.54	.72
Region 3	24	1,060,262	28.14	37,646	46.13	1.64
Region 4	14	1,125,463	49.59	24,550	38.88	.78
Region 5	19	1,433,321	37.30	152,655	157.82	4.23
Region 6	19	692,030	15.60	76,584	89.26	5.72
Region 7	28	1,657,130	45.67	26,352	32.48	.71
Region 8	5	39,931	11.82	663	14.47	1.22
Region 9	19	1,615,913	78.33	41,201	39.36	.50
LSMSA	24	2,298,037	84.50	86.157	70.54	.83
SMSA	37	2,049,733	49.31	70,126	49.96	1.01
OTHER	101	5,926,011	33.93	250,674	74.06	2.18
All Regions	162	10,273,781	42.21	406,957	67.71	1.60

TABLE 2.4

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . TOTAL NEW CONSTRUCTION, REHABILITATION AND JOINT NEW CONSTRUCTION AND REHABILITATION BY OFFICE OF EDUCATION REGIONS, BY STATES AND BY SMSA

OE Region State, SMSA	Number of Institutions and Branch Campuses	Increase in Assignable Area (L + I)	%age Increase Assignable Area	Increase in FTE Enrollment	%age Increase FTE Enrollment	%age Increase in FTE For Each 1 % Increase in Assignable Area
Connecticut	18	1,714,858	191.31	7,188	21.06	.11
Maine	8	672,640	235.07	3,607	34.39	.15
Massachusetts	28	3,515,713	156.94	34,325	46.69	.30
New Hampshire	3	564,680	1,210.02	5,294	272.89	.23
Rhode Island	8	124,306	16.01	3,692	28.17	1.76
Vermont	11	238,661	53.72	1,385	17.53	.33
Region 1	76	6,831,858	145.48	55,491	39.33	.27
Delaware	2	662,112	927.28	4,680	68.59	.07
New Jersey	23	2,291,292	165.05	26,912	51.84	.31
New York	55	4,717,890	104.72	51,375	33.07	.32
Pennsylvania	63	4,334,590	120.64	39,677	41.17	.34
Region 2	143	12,005,884	125.62	122,644	39.51	.31
District of Columbia	7	547,680	90.36	2,541	9.08	.10
Kentucky	13	1,625,336	106.87	23,308	64.71	.61
Maryland	14	1,858,768	134.89	12,215	26.00	.19
North Carolina	43	2,068,820	45.87	16,155	19.46	.42
Virginia	26	1,595,339	90.95	18,001	47.33	.52
West Virginia	15	1,297,276	152.32	17,699	73.86	.48
Puerto Rico	6	616,286	173.62	8,937	38.90	.22
Virgin Islands	1	14,112	138.29	21	10.05	.07

(To be continued on next page)

TABLE 2.4 (Continued)

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . .TOTAL NEW CONSTRUCTION, REHABILITATION AND JOINT NEW CONSTRUCTION AND REHABILITATION BY OFFICE OF EDUCATION REGIONS, BY STATES AND BY SMSA

O.E. REGION STATE, SMSA	NUMBER OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGNABLE AREA	INCREASE IN FTE ENROLLMENT	%AGE INCREASE FTE ENROLLMENT	%AGE INCREASE IN FTE FOR EACH 1% INCREASE IN ASSIGNABLE AREA
Region 3	125	9,623,617	87.60	98,877	35.42	.40
Alabama	17	2,455,014	470.27	18,036	44.00	.09
Florida	24	3,862,061	263.78	23,239	25.93	.10
Georgia	16	3,173,845	761.06	16,066	51.20	.07
Mississippi	17	963,021	73.79	22,291	90.84	1.23
South Carolina	23	1,432,037	139.21	20,349	105.96	.76
Tennessee	22	1,584,979	66.79	20,999	29.51	.44
Region 4	119	13,470,957	189.46	120,980	43.69	.23
Illinois	42	6,633,036	140.92	79,451	59.02	.42
Indiana	17	4,028,817	176.76	54,294	99.49	.56
Michigan	32	6,443,977	245.41	76,179	51.21	.21
Ohio	36	5,570,545	129.23	102,523	64.09	.50
Wisconsin	22	2,983,394	184.23	45,181	71.79	.39
Region 5	149	25,659,769	165.10	357,628	63.76	.39
Iowa	33	2,776,553	116.27	13,381	18.61	.16
Kansas	19	1,692,735	85.28	8,473	16.10	.19
Minnesota	23	2,905,865	141.19	56,119	108.47	.77
Missouri	21	2,058,120	123.68	33,419	52.12	.42
Nebraska	9	326,879	16.64	9,488	25.16	1.51
North Dakota	7	686,253	149.91	7,235	68.36	.46
South Dakota	8	316,542	44.16	3,265	19.02	.43

(To be continued on next page)

TABLE 2.4 (Continued)

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . TOTAL NEW CONSTRUCTION, REHABILITATION AND JOINT NEW CONSTRUCTION AND REHABILITATION BY OFFICE OF EDUCATION REGIONS, BY STATES AND BY SMSA

O.E. REGION STATE, SMSA	NUMBER OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGNABLE AREA	INCREASE IN FTE ENROLLMENT	%AGE INCREASE FTE ENROLLMENT	%AGE INCREASE IN FTE OF EACH 1% INCREASE IN ASSIGNABLE AREA
Region 6	120	10,762,947	95.81	131,380	42.96	.45
Arkansas	15	734,455	41.01	13,769	42.74	1.04
Louisiana	16	2,632,011	162.29	41,380	85.72	.53
New Mexico	6	527,898	68,09	4,245	24.12	.35
Oklahoma	21	1,566,349	61.93	14,784	22.36	.36
Texas	55	5,731,213	98.73	66,194	36.90	.37
Region 7	113	11,191,926	89.38	140,372	40.85	.46
Colorado	14	803,361	31.04	9,700	18.86	.61
Idaho	6	363,423	35.00	3,923	25.16	.72
Montana	8	233,927	33.34	2,513	18.19	.55
Utah	6	1,174,043	430.77	7,170	26.93	.06
Wyoming	3	233,005	270.47	360	11.56	.04
Region 8	37	2,807,759	59.91	23,666	21.40	.36
Alaska	2	251,575	1,430.22	379	18.54	.01
Arizona	8	1,886,645	794.04	13,300	29.75	.04
California	62	8,869,305	155.61	124,452	61.72	.40
Hawaii	2	843,009	R	5,937	48.27	0.
Nevada	1	507,357	R	6,932	522.38	0.
Oregon	15	1,287,810	74.58	10,370	21.41	.29
Washington	14	2,127,683	86.68	12,237	17.95	.21
Guam	0	0	I	0	I	I

(To be continued on next page)

TABLE 2.4 (Continued)

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . TOTAL NEW CONSTRUCTION, REHABILITATION AND JOINT NEW CONSTRUCTION AND REHABILITATION BY OFFICE OF EDUCATION REGIONS, BY STATES AND BY SMSA

OE Region State, SMSA	Number of Institutions and Branch Campuses	Increase in Assignable Area (L + I)	%age Increase Assignable Area	Increase in FTE Enrollment	%age Increase FTE Enrollment	%age Increase in FTE of Each 1% Increase in Assignable Area
Region 9	104	15,773,584	155.62	173,607	45.85	.29
All Regions	986	108,128,301	125.05	1,224,645	45.24	.36

not 1102.

Although there are great differences in the number of institutions, the increase in assignable area and the increase in FTE enrollment, the percentage increase in FTE for each one per cent increase in assignable area is relatively very consistent in the nine regions. The range is from .23 to .46 with the average .36.

As is evident from Table 2.4, there are great variations among states especially in the increase in assignable area and the increase in FTE enrollment.

These data analyzed in the foregoing pages suggest the following conclusions:

1. Approximately 1000 institutions or campuses received funds under Titles I, II or III.
2. The total increase in assignable space was around 108 million square feet which for the institutions concerned was approximately a 125 per cent increase.
3. The enrollment increase amounted to 1.2 million students or approximately a 45 per cent increase.
4. The percentage increase in FTE for each one per cent increase in assignable space was .36.
5. The increase in assignable space for each one addition FTE was approximately 88 square feet.

In Table 2.5 and in several tables following consecutively, the emphasis is put on institutional types rather than states, regions and SMSA. The items included in the last six columns are identical with those found in the first four tables in this section.

There are but four types of public institutions which are represented by more than three per cent of the total number of institutions and campuses. These are universities, liberal arts colleges, teachers colleges and junior colleges. For these the percentages of the total contained in Table 2.5 are:

Junior Colleges	39 per cent
Universities	21 per cent
Teachers Colleges	19 per cent
Liberal Arts	15 per cent

TABLE 2.5

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . BY TYPES OF PUBLIC INSTITUTIONS

TYPE OF INSTITUTION	NO. OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGNABLE AREA	INCREASE IN FTE ENROLLMENT	%AGE INCREASE FTE ENROLLMENT	%AGE INCREASE IN FTE FOR EACH % INCR IN ASSIGNABLE AREA
University	110	56,813,226	324.87	630,137	76.62	.24
Liberal Arts	79	7,572,840	53.57	139,715	36.98	.69
Fine Arts	0	0	I[a]	0	I[a]	I[a]
Teachers College	100	5,915,117	38.97	94,542	27.13	.70
Ind. Tech	10	1,355,856	96.92	17,563	62.24	.64
Theological[b]	0	0	I[a]	0	I[a]	I[a]
Other Ind. Profes.	1	15,366	14.08	2,597	41.73	2.77
Junior Colleges	206	10,487,798	145.74	146,002	48.52	.33
Tech Institute	14	397,310	98.98	9,456	71.96	.73
Semi-Prof School	1	5,252	81.43	100	28.57	.35
Total	521	82,562,765	147.68	1,040,112	54.81	.37

[a] Data Incomplete.

[b] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

All Others	6 per cent
Total	100 per cent

Of these four, the teachers college have the highest percentage increase in FTE for each percentage increase in assignable space. This amounts to .70. Liberal arts colleges with .69 ranks second, junior colleges with .33 third and universities with .24 last. For other items the rank order varies as shown below:

TABLE 2.6

RANK ORDER

Order	No. of Institutions	Increase in Assignable Space	Percent of Increase in Assignable Space	Enrollment Inc.	Percent Incre. Enroll.	Index
1	J. C.	Univ.	Univ.	Univ.	Univ.	T. C.
2	Univ.	J. C.	J. C.	J. C.	T. C.	L. A.
3	T. C.	L. A.	T. C.	T. C.	J. C.	J. C.
4	L. A.	T. C.	L. A.	L. A.	L. A.	Univ.

For the 521 institutions, the average increase in assignable space averaged slightly over 158,000 square feet each. The square feet per FTE was 79.

Table 2.7 provides data which permits an evaluation of the increases in enrollment and assignable space for private institutions. The 312 liberal arts institutions and branch campuses listed in this category are more than twice the number of all other colleges combined. Together with 60 universities and 52 junior colleges, they account for all but 33 of the private colleges that received Title I, Title II or Title III funds in FY 65 and FY 66.

The total increase in assignable space for the 465 private institutions and campuses amounts to 25,565,536 square feet or approximately 55,000 square feet each. The increase in assignable space divided by the increase in FTE yields 139 square feet per FTE.

TABLE 2.7

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE L, TITLE II, AND TITLE III PROJECTS. . . BY TYPES OF PRIVATE INSTITUTIONS

TYPE OF INSTITUTION	NO. OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGNABLE AREA	INCREASE IN FTE ENROLLMENT	%AGE INCREASE FTE ENROLLMENT	%AGE INCREASE IN FTE FOR EACH % INCR. IN ASSIGNABLE AREA
University	60	9,920,078	165.19	58,031	20.13	.12
Liberal Arts	312	13,042,441	60.69	93,345	21.47	.35
Fine Arts	0	0	I[a]	0	I[a]	I[a]
Teachers College	4	84,638	119.01	581	39.10	.33
Ind. Tech	12	672,528	64.64	6,321	24.91	.39
Theological[b]	8	167,534	97.91	2,612	60.87	.62
Other Ind. Profes.	12	395,181	79.33	8,441	48.41	.61
Junior College	52	1,095,994	92.15	13,552	40.71	.44
Tech Institute	0	0	I[a]	0	I[a]	I[a]
Semiprof School	5	187,142	187.62	1,650	36.17	.19
Total	465	25,565,536	83.65	184,533	22.79	.27

[a] Data Incomplete.

[b] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

Table 2.8 combines the increases in enrollment and assignable space for public and private colleges reported in Tables 2.5 and 2.7.

Of the 986 institutions and campuses included in this tabulation, liberal arts colleges (391) accounted for 40 per cent. Junior colleges (258) represented 26 per cent, universities (170) were 17 per cent and teachers colleges 104 added 11 per cent of the total. The combined total of these three types of institutions was 94 per cent.

The 986 institutions and campuses added approximately 108 million square feet of assignable space and 1.25 million students. The overall percentage increase in FTE for each 1 per cent increase in assignable space was .36.

Some significant facts derived from Tables 2.5, 2.7 and 2.8 are summarized in Table 2.9

Tables 2.10, 2.11 and 2.12 examine the enrollment increases and increases in assignable space for the total of 986 institutions and campuses. The breakdown in these tables is by LSMSA, SMSA and other.

It seems appropriate to consider these tables together and to present in tabular form some of the significant data derived from all three as shown in Table 2.13.

The increases in assignable space per institution, and the increases in assignable space per FTE are shown by the major institution types and by LSMSA, SMSA, and other in Table 2.14.

Table 2.15 examines the distribution of the 1.2 million increase in enrollment for institutions receiving federal funds under Titles I, II and III between the year of application and year of occupancy.

Of the enrollment increase, 85 per cent was in the public institutions and 15 per cent in the private institutions. The before and after ratio varied somewhat--the total was 1.45, the private 1.23 and the public institutions 1.55.

The fifteen significant ratios for public, private and total are shown below:

	Public	Private	Total
University	1.77	1.20	1.62
Liberal Arts	1.37	1.21	1.29
Teachers Colleges	1.27	1.39	1.27

TABLE 2.8

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . BY TYPES OF PUBLIC AND PRIVATE INSTITUTIONS

TYPE OF INSTITUTION	NO. OF INSTITUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGNABLE AREA (L + I)	%AGE INCREASE ASSIGN-ABLE AREA	INCREASE IN FTE ENROLL-MENT	%AGE INCREASE FTE EN-ROLLMENT	%AGE INCREASE IN FTE FOR EACH % INCREASE IN ASSIGNABLE AREA
University	170	66,733,304	284.05	688,168	61.96	.22
Liberal Arts	391	20,615,281	57.87	233,060	28,68	.50
Fine Arts	0	0	I[b]	0	I[b]	I[b]
Teachers Coll.	104	5,999,755	39.35	95,123	27.18	.69
Ind. Tech	22	2,028,384	83.15	23,884	44.56	.54
Theological[a]	8	167,534	97.91	2,612	60.87	.62
Other Ind. Prof.	13	410,547	68.42	11,038	46.65	.68
Junior College	258	11,583,792	138.14	159,554	47.74	.35
Tech Institute	14	397,310	98.98	9,456	71.96	.73
Semi Prof Sch.	6	192,394	181.17	1,750	35.63	.20
Total	986	108,128,301	125.05	1,224,645	45.24	.36

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[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

[b] Data Incomplete.

TABLE 2.9

SUMMARY OF THE INCREASES IN FTE AND ASSIGNABLE SPACE IN PUBLIC AND PRIVATE INSTITUTIONS

Item	Public	Private	Total
Number of Institutions or Branch Campus	521	465	986
Percentage	53	47	100
Increase in Assignable Space per Institution	158,000	55,000	109,633
Increase in FTE per Institution	1,996	396	1,242
Additional Space per FTE	79	139	88
Percentage Increase in FTE for each 1 Per Cent Increase in Assignable Space	.37	.25	.36

TABLE 2.10

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . BY TYPES OF INSTITUTIONS IN LARGE STANDARD METROPOLITAN STATISTICAL AREAS

TYPE OF INSTITUTION	NO. OF INSITTUTIONS AND BRANCH CAMPUSES	INCREASE IN ASSIGN-ABLE AREA (L + I)	%AGE INCREASE ASSIGN-ABLE AREA	INCREASE IN FTE ENROLL-MENT	%AGE INCREASE FTE EN-ROLLMENT	%AGE INCREASE IN FTE FOR EACH % INCR. IN ASSIGNABLE AREA
University	44	14,117,211	417.72	112,161	36.84	.09
Liberal Arts	64	4,197,753	57.38	68,683	39.24	.68
Fine Arts	0	0	I[b]	0	I[b]	I[b]
Teachers College	6	211,451	26.42	3,469	15.64	.59
Ind. Tech	3	107,303	39.74	1,943	29.28	.74
Theological[a]	1	18,528	63.19	150	23.08	.37
Other Ind. Profes.	4	185,230	143.75	5,267	106.02	.74
Junior College	25	1,202,694	60.45	22,433	29.15	.48
Tech Institute	1	29,934	100.95	12	2.46	.02
Semiprof School	4	175,504	193.24	834	33.63	.17
Total	152	20,245,608	144.27	214,952	36.20	.25

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[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

[b] Data Incomplete.

TABLE 2.11

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . BY TYPES OF INSTITUTIONS IN STANDARD METROPOLITAN STATISTICAL AREAS

Type of Institution	No. of Institutions and Branch Campuses	Increase in Assignable Area (L + I)	%age Increase Assignable Area	Increase in FTE Enrollment	%age Increase FTE Enrollment	%age Increase in FTE for Each % Incr. in Assignable Area
University	42	19,151,423	292.41	190,095	65.78	.22
Liberal Arts	127	6,094,815	52.66	72,460	28.02	.53
Fine Arts	0	0	I[a]	0	I[a]	I[a]
Teachers College	18	770,697	27.12	17,858	30.10	1.11
Ind. Tech	6	537,662	75.13	5,826	38.73	.52
Theological[b]	0	0	I[a]	0	I[a]	I[a]
Other Ind. Profes.	5	111,595	30.06	4,131	29.87	.99
Junior College	61	2,632,266	165.04	31,063	41.52	.25
Tech Institute	6	174,770	114.00	3,030	61.85	.54
Semi Prof School	1	11,638	130.47	816	39.19	.30
Total	266	29,484,866	123.84	325,279	45.33	.37

[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

[b] Data Incomplete.

TABLE 2.12

INCREASES IN ENROLLMENT AND IN ASSIGNABLE AREA IN INSTRUCTION AND LIBRARY FACILITIES DUE TO TITLE I, TITLE II, AND TITLE III PROJECTS . . . BY TYPES OF INSTITUTIONS OUTSIDE OF LARGE AND STANDARD METROPOLITAN STATISTICAL AREAS

Type of Institution	No. of Institutions and Branch Campuses	Increase in Assignable Area (L + I)	%age Increase Assignable Area	Increase in FTE Enrollment	%age Increase FTE Enrollment	%age Increase in FTE for Each % Incr. in Assignable Area
University	84	33,464,670	246.71	385,912	74.61	.30
Liberal Arts	200	10,322,713	61.68	91,917	24.25	.39
Fine Arts	0	0	I[b]	0	I[b]	I[b]
Teachers College	80	5,017,607	43.23	73,796	27.48	.64
Ind. Tech	13	1,383,419	95.17	16,115	50.49	.53
Theological [a]	7	149,006	105.08	2,462	67.62	.64
Other Ind. Prof.	4	113,722	113.71	1,640	33.71	.30
Junior College	172	7,748,832	161.40	106,058	58.13	.36
Tech Institute	7	192,606	88.17	6,414	82.73	.94
Semiprof School	1	5,252	81.43	100	28.57	.35
Total	568	58,397,827	120.09	684,414	49.04	.41

[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

[b] Data Incomplete.

TABLE 2.13

NUMBER AND PERCENTAGE OF INSTITUTIONS BY LSMSA, SMSA AND OUTSIDE

	Number			Percentage			
Type Institution	1[a]	2[b]	3[c]	1[a]	2[b]	3[c]	Total
University	44	42	84	26	25	49	100
Liberal Arts	64	127	200	16	32	52	100
Teachers Col.	6	18	80	6	18	77	100
Junior Col.	25	61	172	9	24	67	100
Other	13	18	32	20	29	51	100
Total	152	266	568	15	27	58	100

[a] LSMSA

[b] SMSA

[c] Outside

TABLE 2.14

INCREASE IN ASSIGNABLE SPACE PER INSTITUTION, INCREASE IN FTE PER INSTITUTION AND NUMBER OF SQ. FT. INCREASE, ETC.--BY LSMSA (1), SMSA (2) AND OTHER (3)

Type	Increase in Assignable Space per Institution			Increase in FTE per Institution			No. of Sq. Ft. Increase in assignable space for Each Additional FTE Stud.		
	1[a]	2[b]	3[c]	1[a]	2[b]	3[c]	1[a]	2[b]	3[c]
University	320,846	455,986	398,388	2,549	4,526	4,594	125	101	87
Lib. Arts	65,590	47,990	51,613	1,073	570	459	61	84	112
Teachers C.	35,242	42,816	62,720	578	992	922	61	43	68
Junior C.	48,108	43,151	45,051	897	509	616	54	85	73
Other	39,731	46,425	57,625	631	766	835	81	61	69
Average	133,195	110,845	102,813	1,414	1,222	1,204	94	91	85

[a] LSMSA

[b] SMSA

[c] SMSA

TABLE 2.15

ENROLLMENT GROWTH AND ENROLLMENT RATIO FOR THE YEAR OF APPLICATION AND THE YEAR OF OCCUPANCY . . . BY TYPE AND CONTROL OF INSTITUTION

Type and Control	Enrollment (FTE)		Ratio
	Before Approval	After Approval	After/Before
University	822,404	1,452,541	1.77
Liberal Arts	377,781	517,496	1.37
Fine Arts	0	0	I[b]
Teachers College	348,535	443,077	1.27
Ind. Tech	28,217	45,780	1.62
Theological[a]	0	0	I[b]
Other Ind. Profess.	6,224	8,821	1.42
Junior College	300,930	446,932	1.49
Tech Institute	13,140	22,596	1.72
Semiprof School	350	450	1.29
Public	1,897,581	2,937,693	1.55
University	288,285	346,316	1.20
Liberal Arts	434,830	528,175	1.21
Fine Arts	0	0	I[b]
Teachers College	1,486	2,067	1.39
Ind. Tech	25,378	31,699	1.25
Theological [a]	4,291	6,903	1.61
Other Ind. Profess.	17,438	25,879	1.48
Junior College	33,292	46,844	1.41
Tech Institute	0	0	I[b]
Semiprof School	4,562	6,212	1.36
Private	809,562	994,095	1.23
University	1,110,689	1,798,857	1.62
Liberal Arts	812,611	1,045,671	1.29
Fine Arts	0	0	I[b]
Teachers College	350,021	445,144	1.27
Ind. Tech	53,595	77,479	1.45
Theological [a]	4,291	6,903	1.61
Other Ind. Profess	23,662	34,700	1.47
Junior College	334,222	493,776	1.48
Tech Institute	13,140	22,596	1.72
Semiprof School	4,912	6,662	1.36
All	2,707,143	3,931,788	1.45

[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

[b] Data Incomplete.

	Public	Private	Total
Junior colleges	1.49	1.48	1.48
Average of all institutions	1.55	1.36	1.44

Table 2.16 reviews the 1.2 million enrollment increase in terms of institutional size. Several points appear significant. These include:

1. The total increase in enrollment occasioned by Titles I, II and III amounted to 45 per cent.
2. The larger the previous enrollment was the less was the percentage increase.
3. The extremely high percentage increase for institutions under 200 was caused by the fact that many of these had no enrollment at the beginning of the period and in some cases exceeded 5000 by the time of occupancy. As individual institutions, the percentage growth could not be computed but in total the 18.74 ratio is both accurate and reasonable.

Tables 2.17 and 2.18 examine enrollment increases in terms of institutional size. At first glance, it would seem that the totals of 2.17 and 2.18 should add up to Table 2.16. This, however, is not the case since considerable number of institutions appearing in 2.16 totals were excluded from Tables 2.17 and 2.18 because of incomplete information. Some, but not all of those excluded were 22 new institutions with no enrollment before approval and approximately 40,000 enrollment afterwards. This accounts for the great deviation in the ratios for institutions in the under 200 size category.

Tables 2.17 and 2.18 do not have the clear pattern shown in 2.16 where the ratios varied inversely as the size of the enrollment classification. In fact, little pattern is evident in the ratios of either 2.17 or 2.18. In Table 2.19, the ratios from 2.17 and 2.18 are arranged in descending order.

TABLE 2.16

GROWTH AND ENROLLMENT RATIO FOR THE YEAR OF APPLICATION AND THE YEAR OF FACILITY OCCUPANCY . . . BY SIZE OF INSTITUTION

Size of Institution	Enrollment (FTE)		Ratio
	Before Approval	After Approval	After/Before
Below 200	2,351	44,066	18.74
200 - 499	38,944	83,431	2.14
500 - 999	166,221	296,801	1.79
1,000 - 2,499	451,462	717,154	1.59
2,500 - 4,999	499,815	781,778	1.56
5,000 - 9,999	706,973	936,731	1,32
10,000 - 19,999	691,699	897,384	1.30
20,000 - Plus	149,678	174,443	1.17
Total	2,707,143	3,931,788	1.45

TABLE 2.17

GROWTH AND ENROLLMENT RATIO FOR THE YEAR OF APPLICATION AND THE YEAR OF FACILITY OCCUPANCY . . . BY SIZE OF INSTITUTION FOR JUNIOR COLLEGES AND TECHNICAL INSTITUTES ONLY

Size of Institution	Enrollment (FTE)		Ratio
	Before Approval	After Approval	After/Before
Below 200	1,831	3,736	2.04
200 - 499	23,165	32,907	1.42
500 - 999	51,143	70,461	1.38
1,000 - 2,499	116,625	190,422	1.63
2,500 - 4,999	55,290	69,799	1.26
5,000 - 9,999	70,801	87,031	1.23
10,000 - 19,999	26,657	31,299	1.17
20,000 - Plus	0	0	0
Total	345,512	485,655	1.41

TABLE 2.18

GROWTH AND ENROLLMENT RATIO FOR THE YEAR OF APPLICATION AND THE YEAR OF FACILITY OCCUPANCY . . . BY SIZE OF INSTITUTION FOR ALL INSTITUTIONS OTHER THAN JUNIOR COLLEGES AND TECHNICAL INSTITUTES

Size of Institutions	Enrollment (FTE)		Ratio
	Before Approval	After Approval	After/Before
Below 200	520	1,125	2.16
200 - 499	15,779	50,524	3.20
500 - 999	110,828	221,433	2.00
1,000 - 2,499	325,692	516,270	1.59
2,500 - 4,999	437,474	702,849	1.61
5,000 - 9,999	626,172	849,700	1.34
10,000 - 19,999	665,042	866,085	1.30
20,000 - Plus	149,678	174,443	1.17
Total	2,341,185	3,382,429	1.44

TABLE 2.19

RATIOS OF ENROLLMENTS BEFORE AND AFTER THE APPROVAL OF FUNDS FOR JUNIOR COLLEGES AND OTHER INSTITUTIONS BY SIZE

Junior Colleges		Other	
Below 200	2.04	200 - 499	3.20
1,000 - 2,499	1.63	Under 200	2.16
200 - 499	1.42	500 - 999	2.00
500 - 999	1.38	2,500 - 4,999	1.61
2,500 - 4,999	1.26	1,000 - 2,499	1.59
5,000 - 9,999	1.23	5,000 - 9,999	1.34
10,000 - 19,999	1.17	10,000 - 19,999	1.30
		20,000 - Plus	1.17

Summary of Findings and Conclusions

Findings

The major findings of this section are:

1. The total increase in full-time equivalent (FTE) enrollment due to Titles I, II and III of the Higher Education Facilities Act amounted to 45 per cent. This percentage covered 986 institutions, all types of construction, all sizes and types of colleges in all parts of the United States.
2. The total increase in assignable space in the same 986 institutions amounted to 125 per cent.
3. The percentage increase in full-time equivalent students for each 1 per cent increase in assignable area amounted to .36.

Other significant findings included:

1. In public institutions, universities accounted for 60 per cent of the total increase in enrollment and nearly 70 per cent of the increase in assignable space. Junior colleges, liberal art colleges and teachers colleges had significant increases in assignable area and in enrollment increases.
2. In private institutions liberal arts colleges accounted for over 50 per cent of both the increases in assignable area and in enrollment. Most of the remaining increases were found in junior colleges, universities and independent technical schools.
3. The total enrollment increase was 1.25 million students and the total increase in assignable space was in excess of 108 million square feet. This was approximately 88 square feet increase in assignable space for each FTE.
4. Ninety four per cent of the institutions and campuses included in the study fall into four

categories. These were liberal arts colleges, 40 per cent; junior colleges, 26 per cent; universities, 17 per cent; and teachers colleges 11 per cent.

5. Of these four types of institutions, the percentage FTE enrollment increase for each 1 per cent of increase in assignable space was teacher colleges, .70; liberal arts colleges, .69; junior colleges, .33; and universities, .24. The average for all institutions was .36.
6. Of the 152 institutions in the Large Standard Metropolitan Statistical Areas 42 per cent were liberal arts colleges, 29 per cent were universities and 16 per cent were junior colleges. These three groups account for 87 per cent of the total institutions, over 90 per cent of the increase in assignable area and nearly 95 per cent of the increase in enrollment in the LSMSA.
7. Of the 266 institutions in the SMSA, liberal arts colleges were 48 per cent, junior colleges 23 per cent, universities 16 per cent and teachers colleges, 7 per cent. These institutions accounted for 94 per cent of the total. The percentage increases in assignable area are quite different-- 21 per cent for liberal arts colleges, 9 per cent for junior colleges, 65 per cent for universities and 3 per cent for teachers colleges. Of the enrollment increases in the SMSA, the percentages were 22 per cent for liberal arts colleges, 9 per cent for junior colleges, 59 per cent for universities and 5 per cent in teachers colleges.
8. Outside the LSMSA and SMSA, there were 568 institutions or 105 more than were in both the LSMSA and SMSA. The 568 is composed of 200 liberal arts colleges or 35 per cent, 172 junior colleges or 30 per cent; 84 universities or 15 per cent and 80 teachers colleges or 12 per cent. The universities

have the largest increase in assignable space 56 per cent and largest increase in FTE enrollment 56 per cent. Of the totals in these areas, junior colleges have 13 per cent of the assignable space increase and 15 per cent in the enrollment increase, liberal arts colleges account for 17 and 13 per cent respectively; and teachers colleges, 8 and 11 per cent respectively of these totals.

Conclusions

The Higher Education Facilities Act has had a great effect on both the enrollment increase, 45 per cent and the assignable area increase, 125 per cent.

The percentage increase in FTE enrollment for each one per cent increase in assignable area averaged .36.

III

EFFECTS OF THE ACT ON THE MAINTENANCE OF EFFORT TO SUPPORT CONSTRUCTION

Introduction

The concern here is whether the funds made available under PL 88-204 are really adding to physical facilities of colleges or merely supplanting funds otherwise available. It is also of concern to know whether and to what extent funds available under the Act have affected the amount of funds made available from non-federal sources, namely, from state and local governmental units and from private sources. In brief, has effort to provide funds from non-federal sources increased or diminished under the availability of federal funds not heretofore available?

Procedures Used

In order to obtain answers to the major questions raised above, two procedures were used:

1. A statistical analysis of the pertinent financial data broken down into categories reflecting the actual and comparative situations with respect to regions and states, types of higher education institutions, size of institutions and the types of area in which the institutions are located (LSMSA, SMSA and all other area), and the increase in enrollment.
2. A compilation of opinions on the operation of the Act obtained from 43 institutions (22 public and 21 private) by long distance telephone conversation, 6 institutions by personel interview, and 9 state commissions responsible for administration of the Act by personal interview.

The questions and pertinent data will be presented in the order indicated.

Statistical Analysis

Two questions regarding effort of state and local governments and of private sources to contribute to the financing of projects falling under provision of the Act are:

1. What are the comparative efforts among the Regions and States and sizes of institutions to finance additional academic facilities?
2. Has financial effort by state and local governmental units and by private sources increased or diminished during the period of the operation of the Act?

Two explanations are in order before proceeding with the presentation of the data pertaining to the questions posed immediately above:

1. Effort may be defined in absolute terms. As, for example, the ratio of non-federal contribution to the federal contribution. In that case, it is assumed that the higher the ratio of non-federal contribution, the greater the effort or conversely, the higher the ratio of federal contribution, the lower the effort. For comparative purposes, the data can be expressed as an index of effort, which is derived by dividing each ratio of non-federal contribution by the national ratio. For example, in Table 3.1, the national ratio of non-federal contributions is .72; in Region 1, the ratio is .68; accordingly the index of effort for Region 1 is .68 ÷ 72 or .94.
2. Effort may also be measured in terms of what was done in the period of the operation of the Act as compared to what was done in a similar prior period. In this instance, the data for 1962-63 and 1963-64 (FY 63 and FY 64) are used for comparison with the

TABLE 3.1

THE RATIOS OF FEDERAL GRANTS AND LOANS UNDER TITLES, I, II AND III P.L. 88-204 TO THE TOTAL COST OF CONSTRUCTION AND REHABILITATION PROJECTS AIDED, BASED ON TOTALS FOR FY 65 AND FY 66, BY REGIONS AND CONSTITUENT STATES

Region and State	Ratio		Index of Effort
	Federal	Non-Federal	
Total - All Regions	.28	.72	1.00
Region 1	.32	.68	.94
Connecticut	.37	.63	.87
Maine	.45	.55	.77
Massachusetts	.29	.71	.98
New Hampshire	.21	.79	1.09
Rhode Island	.29	.71	.98
Vermont	.43	.57	.79
Region 2	.28	.72	1.00
Delaware	.23	.77	1.06
New Jersey	.29	.71	.98
New York	.24	.76	1.05
Pennsylvania	.36	.64	.89
Region 3	.36	.64	.89
District of Columbia	.52	.48	.66
Kentucky	.42	.58	.80
Maryland	.22	.78	1.08
North Carolina	.31	.69	.95
Virginia	.27	.73	1.02
West Virginia	.27	.73	1.02
Puerto Rico	.86	.14	.19
Virgin Islands	.01	.99	1.37
Region 4	.27	.73	1.02
Alabama	.23	.77	1.06
Florida	.32	.68	.94
Georgia	.27	.73	1.02
Mississippi	.22	.78	1.08
South Carolina	.25	.75	1.04
Tennessee	.27	.73	1.02
Region 5	.25	.75	1.04
Illinois	.25	.75	1.04
Indiana	.31	.69	.95
Michigan	.24	.76	1.05
Ohio	.23	.77	1.06
Wisconsin	.27	.73	1.02
Region 6	.31	.69	.95
Iowa	.42	.58	.80

(To be continued on next page)

TABLE 3.1 (Continued)

THE RATIOS OF FEDERAL GRANTS AND LOANS UNDER TITLES, I, II AND III P.L. 88-204 TO THE TOTAL COST OF CONSTRUCTION AND REHABILITATION PROJECTS AIDED, BASED ON TOTALS FOR FY 65 AND FY 66, BY REGIONS AND CONSTITUENT STATES

Region and State	Ratio Federal	 Non-Federal	Index of Effort
Region 6 (Continued)			
Kansas	.34	.66	.91
Minnesota	.28	.72	1.00
Montana	.27	.73	1.02
Nebraska	.29	.71	.98
North Dakota	.41	.59	.81
South Dakota	.28	.72	1.00
Region 7	.34	.66	.91
Arkansas	.46	.54	.75
Louisiana	.34	.66	.91
New Mexico	.28	.72	1.00
Oklahoma	.36	.64	.89
Texas	.33	.67	.93
Region 8	.29	.71	.98
Colorado	.29	.71	.98
Idaho	.35	.65	.91
Montana	.32	.68	.94
Utah	.28	.72	1.00
Wyoming	.15	.85	1.18
Region 9	.23	.77	1.06
Alaska	.17	.83	1.16
Arizona	.28	.72	1.00
California	.22	.78	1.08
Hawaii	.39	.61	.84
Nevada	.14	.86	1.19
Oregon	.21	.79	1.09
Washington	.35	.65	.91
Guam	-	-	

Range Among Regions:

Highest Region 3 - .36

Lowest Region 9 - .29

Range Among States:

Highest Dist. of Col. - .52

Lowest Nevada - .14

data for FY 65 and FY 66, the years of full operation of the Act have been used. The measure is the ratio of the first period to the second. That ratio has been converted into an index of effort by dividing each individual ratio by the national ratio.

Comparative Effort, Regions and States

Regions and States

For the nation as a whole, the federal contribution to construction projects during the period FY 65 and FY 66 was 28 per cent of the total cost of the participating projects. Corresponding percentages (ratio of federal grants and loans to the total cost of projects) for the nine regions utilized by the U. S. Office of Education in the administration of the Act and for the individual states, the District of Columbia and outlying territories are shown in Table 3.1. For each region and state, an index of effort is shown.

Certain deductions from the data of Table 3.1 relative to the question of comparative effort of regions and states can be made as follows:

1. The average contribution of the federal government in relation to the total cost of the projects is less than the limits allowed by the provisions of the Act.
2. Among the several states, there are considerable variations in the efforts of the participating institutions to match federal contributions. When the index of effort in Mississippi is 1.08 and in Arkansas only .75 there is no superficial explanation of the difference. The difference is probably wholly a difference in state policy respecting the financing of higher education facilities.
3. Among regions, there is a relatively narrow range in the index of effort, the range being from .89 in Region 3 to 1.06 in Region 9.

4. The reasons for the differences in effort are not obvious from the data presented. The need for further research in this area is indicated.
5. In the nature of a summary, it can be said that for the nation as a whole, the effort to match federal contributions is satisfactory. However, there are exceptions that indicate need for further study and research.

Comparative Effort by Types of Institutions

It is of interest to know the relative efforts to match the federal grants by the various types of institutions and by public and private institutions respectively. The data regarding the effort of such institutions are presented in Table 3.2.

As measured by the ratio of non-federal funds to the total cost of projects involved, the indices of effort as they appear in Table 3.2 indicate the following conclusions:

1. The effort to support construction for public institutions is higher than for private institutions, in fact, about 19 per cent greater.
2. So far as the federal government is concerned, it obtains more construction for its money through public institutions than private.
3. Among the types of institutions the effort to match federal funds is quite variable for both public and private institutions. In the case of the public institutions, the range in the ratio of non-federal contributions to total cost is .33 for semi-professional schools to .89 for independent professional schools.

Comparative Effort by Size of Institutions

Size of institutions that received federal grants may be a factor related to effort to provide funds from non-federal sources. The data in this respect appear in Table 3.3. The

TABLE 3.2

THE RATIO OF FEDERAL GRANTS AND LOANS UNDER TITLE I, II AND III P.L. 88-204 TO THE TOTAL COST OF CONSTRUCTION AND REHABILITATION PROJECTS AIDED, TOTALS FOR FY 65 AND FY 66, BY TYPES OF INSTITUTIONS AND TYPES OF CONTROL

	Ratios								
	Public		Private		All			Index of Effort	
Type of Institution	Fed.	Non-Fed.	Fed.	Non-Fed.	Fed.	Non-Fed.	Public	Private	All
Total	.24	.76	.36	.64	.28	.72	1.06	.89	1.00
University	.22	.78	.29	.71	.24	.76	1.08	.98	1.06
Liberal Arts	.27	.73	.40	.60	.35	.65	1.01	.83	.90
Fine Arts	-	-	-	-	-	-	-	-	-
Teachers Col.	.31	.69	.17	.83	.31	.69	.96	1.15	.96
Independent Technical	.23	.77	.30	.70	.26	.74	1.07	.97	1.03
Theological[a]	-	-	.41	.59	.41	.59	-	.82	.82
Other Ind. Prof.	.11	.89	.42	.58	.41	.59	1.24	.81	.82
Junior Col.	.25	.75	.34	.66	.26	.74	1.04	.92	1.03
Tech. Inst.	.24	.76	-	-	.24	.76	1.06	-	1.06
Semi-Prof. School	.67	.33	.45	.55	.46	.54	.46	.76	.72

Range:

Highest Semi. Prof. - .67

Lowest Ind. Prof. - .11

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[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

TABLE 3.3

THE RATIO OF FEDERAL GRANTS AND LOANS UNDER TITLE I, II AND III, P.L. 88-204 TO THE TOTAL COST OF CONSTRUCTION AND REHABILITATION PROJECTS AIDED, TOTALS FOR FY 65 AND FY 66, BY SIZE OF INSTITUTION

Size Group	Ratio Federal	Ratio Non-Federal	Index of Effort
Total	.28	.72	1.00
Below 200	.29	.71	.98
200 - 499	.33	.67	.93
500 - 999	.35	.65	.90
1,000 - 2,499	.30	.70	.97
2,500 - 4,999	.27	.73	1.01
5,000 - 9,999	.28	.72	1.00
10,000 - 19,999	.22	.78	1.08
20,000 - Plus	.19	.81	1.13

Range:

Highest

Federal - 500 - 999 - .35
Non-Fed. - 20,000 + - .81
Index of Effort - 20,000+ - 1.13

Lowest

Federal - 20,000+ - .19
Non-Fed. - 500 - 999 - .65
Index of Effort - 500 - 999 - .90

observations as to the relationship of size of institution and effort is simple and direct:

1. For the most part, the larger the institution, the greater the effort. In short, the federal government gets results for its money in proportion to the size of the institution aided.
2. Regardless of the variability of effort in proportion to size of institution, the evidence back of the conclusion is that effort to match federal funds has been at least adequate and has not experienced diminution.

Increase in Effort During the Operation of the Act

Types of Institutions

Data found in Table 3.4 is based on a comparison of capital outlay expenditures in the period of the operation of the Act, FY 65 and FY 66, with capital outlay expenditures in the two immediately preceding years, FY 63 and FY 64. It is likewise for data appearing in Tables 3.5 through 3.8. The data involve the 373 institutions that had capital outlay expenditures in both periods.

Analysis of the data in Table 3.4 indicates the following significant conclusions:

1. For all types of institutions capital outlay expenditures under the operation of the Act were nearly three times as great (2.93) as during the immediately preceding period. The greatest increases were among private institutions in all categories except technical institutes.
2. In terms of effort, the private institutions excelled in all categories except teachers' colleges and technical institutions.
3. The Higher Education Facilities Act, whatever else it may be, is a bonanza for privately controlled institutions of higher education.

TABLE 3.4

THE RATIO OF AVERAGE CAPITAL OUTLAY EXPENDITURES FOR COLLEGE FACILITIES FY 63 AND FY 64 TO THE SIMILAR AVERAGE OF FY 65 AND FY 66, BY TYPES OF INSTITUTIONS AND TYPES OF CONTROL.

(Same institutions and same types of facilities for both periods.)

	Ratios and Number of Institutions						Index of Effort		
	Public		Private		All				
Type	Ratio	No.	Ratio	No.	Ratio	No.	Public	Private	All
Total	2.50	232	5.00	141	2.92	373	.86	1.71	1.00
University	2.64	76	4.45	34	2.93	110	.90	1.52	1.00
Liberal Arts	2.82	47	4.98	85	3.52	132	.97	1.71	1.21
Fine Arts	-	0	-	0	-	0	-	-	-
Teachers College	2.02	58	-	0	2.02	58	.69	-	.69
Ind. Technical	1.06	4	6.15	7	2.07	11	.36	2.11	.71
Theological[a]	-	0	79.10	1	79.10	1	-	27.09	27.09
Other Independent Professional	1.44	1	39.52	1	11.94	2	.49	13.53	4.09
Junior College	2.10	45	12.15	13	2.64	58	.72	4.16	.90
Tech. Institute	6.31	1	-	0	6.31	1	2.16	-	2.16
Semi-Professional	-	0	-	0	-	0	-	-	-

Highest Number				Lowest Number			
Public	University	-	76	Public	Ind. Tech.	-	1
Private	Lib. Arts	-	85	Private	Tech. Inst.	-	0
All	Lib. Arts	-	132	All	Tech. Inst.	-	1

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[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

Increased Capital Outlay Expenditures and Size of Institution

The information as to the relationship between the size of educational institutions and increased capital outlay expenditures under the operation of the Act appears in Table 3.5. The significant conclusions are as follows:

1. Capital outlay expenditures actually increased for all sizes of institutions under the operation of the Act.
2. In terms of absolute increases in capital outlay expenditures and also in terms of effort as defined, the greatest increases were among moderate size institutions, that is, among institutions having 500 to 5,000 enrollment. The poorest record was among very small and very large institutions.

Increases in Capital Outlay Expenditures by Types of Area of Location

Types of Institutions

Three types of areas of location of institution are identified and used as a basis of classification; LSMSA consists of the large metropolitan areas containing a central city of 500,000 or more population; SMSA consists of metropolitan areas containing a central city of 50,000 and up to 500,000 population; outside consists of all areas other than the two areas already identified.

The question under consideration here is whether the increases in capital outlay expenditures for various types of institutions under the operation of the Act are associated with the size of the area in which the institutions are located. The pertinent data are shown in Table 3.6. The principal conclusions are as follows:

1. The relative increases for institutions as a whole are in the following order: LSMSA, a ratio of 3.73 to 1.00; outside areas, a ratio of 2.84 to 1.00; and SMSA, a ratio of 2.50 to 1.00.

TABLE 3.5

THE RATIO OF AVERAGE CAPITAL OUTLAY EXPENDITURES FOR COLLEGE FACILITIES FY 63 AND FY 64 TO THE SIMILAR AVERAGE OF FY 65 AND FY 66, BY SIZE OF INSTITUTION

(Same institutions and same types of facilities for both periods.)

Size of Enrollment	No. of Institutions	Ratio	Index of Effort
Total	373	2.92	1.00
Below 200	17	1.16	.40
200-499	15	1.26	.43
500-999	54	4.99	1.71
1000 - 2499	96	3.60	1.23
2500 - 4999	66	3.44	1.18
5000 - 9999	79	3.06	1.05
10,000 - 19,999	40	2.88	.99
20,000 Plus	6	1.28	.44

Highest

1000 - 2499 - 96 No. of institutions

500 - 999 - 4.99 Ratio

Lowest

20,000 Plus - 6 No. of institutions

Below 200 - 1.16 Ratio

TABLE 3.6

THE RATIO OF AVERAGE CAPITAL OUTLAY EXPENDITURES FOR COLLEGE FACILITIES FY 63 AND FY 64 TO THE SIMILAR AVERAGE OF FY 65 AND FY 66, BY TYPE OF INSTITUTION AND TYPE OF THE AREA OF LOCATION OF THE INSTITUTION (SMSA). (SAME INSTITUTIONS AND SAME TYPES OF FACILITIES FOR BOTH PERIODS.)

Type of Inst.	No. of Inst.	Ratios and Number of Institutions LSMSA Ratio	No.	SMSA Ratio	No.	Outside Ratio	No.	Index of Effort[1] Types of Area LSMSA	SMSA	Outside
Total	373	3.73	67	2.50	93	2.84	213	2.28	.86	.97
University	110	4.20	27	2.15	29	3.03	54	1.44	.74	1.04
Liberal Arts	132	3.02	26	4.05	42	3.72	64	1.03	1.39	1.27
Fine Arts	-	-	0	-	0	-	0	-	-	-
Teachers Col.	58	1.28	4	2.36	6	2.04	48	.44	.79	.70
Ind. Tech.	11	29.38	1	2.27	4	1.59	6	10.06	.73	.54
Theological[2]	1	-	0	-	0	79.10	1	-	-	27.09
Other Ind. Professional	2	39.52	1	1.44	1	-	0	13.53	.49	-
Junior Col.	58	2.88	8	3.11	11	2.19	39	.99	1.07	.75
Tech. Inst.	1	-	0	-	0	6.31	1	-	-	2.16
Semi-Prof.	-	-	0	-	0	-	0	-	-	-
Highest	Lib. Arts	Other Ind. Prof	Univ.	Lib. Arts	Lib. Arts	Lib. Arts	Lib. Arts	Other Ind. Prof.	Lib. Arts	Lib. Arts
	132	39.52	27	4.05	42	3.72	64	13.53	1.39	1.27
Lowest	Tech. Inst.	T.C.	Tech.	Ind. Tech.	Tech.	Tech.	Theo.	T.C.	Tech.	T.C.
	1	1.28	1	1.44	1	1.59	1	.44	.49	.70

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[1] Based on ratio of 4.07 for all institutions participating in FY 63 and FY 64, and FY 65 and FY 66. See Table 3.4

[2] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

2. With respect to the index of effort based on ratio of non-federal contributions to the total cost of projects the order is: LSMSA, 2.28; outside areas, .97; and SMSA, .86.
3. The most substantial increases in capital outlay expenditures were for independent technical institutions in LSMSA, the ratio for independent technical institutions being 29.38 to 1.00 and for other independent institutions (classification used by the U. S. Office of Education), 39.52 to 1.00. This same conclusion is also substantiated by the indexes of effort.
4. Respecting increases in capital outlay expenditures and index of effort teachers colleges rank lowest among the types of institutions.

Size of Institutions

The question under consideration here is whether increases in capital outlay expenditures are associated with the size of institutions in the three areas of location. The pertinent data appear in Table 3.7 and give the basis for the following conclusions:

1. In all areas of location, the lowest increases in capital outlay expenditures and the lowest indices of effort are among the small institutions having fewer than 500 enrollment. Among these small institutions, however, the best records are for those institutions located outside of metropolitan areas.
2. With the exception of one very large institution, the highest percentages of increase in capital outlay expenditures and the highest indices of effort were for institutions located in the Large Standard Metropolitan Statistical Areas.
3. With respect to both measures here under consideration, the most superior record was among institutions having 500 up to 1,000 enrollment in large metropolitan areas.

TABLE 3.7

THE RATIO OF AVERAGE CAPITAL OUTLAY EXPENDITURES FOR COLLEGE FACILITIES FY 63 AND FY 64 TO THE SIMILAR AVERAGE OF FY 65 AND FY 66, BY SIZE OF INSTITUTION AND BY TYPE OF THE AREA OF LOCATION OF THE INSTITUTION, (SMSA).

(Same institutions and same type of facilities for both periods.)

		Ratios and Number of Institutions						Index of Effort[1]		
		Type of Area						Type of Area		
		LSMSA		SMSA		Outside				
Size of Enrollment	No. of Inst.	Ratio	No.	Ratio	No.	Ratio	No.	Index	Index	Index
Total	373	3.73	67	2.50	93	2.84	213	1.28	.86	.97
Below 200	17	1.39	6	.11	2	2.09	9	.48	.04	.72
200-499	15	-	0	.59	4	2.09	11	-	.20	.72
500-999	54	8.94	6	4.73	13	3.71	35	3.06	1.62	1.27
1000-2499	96	3.44	10	3.39	31	3.75	55	1.18	1.16	1.28
2500-4999	66	6.04	13	5.19	11	2.75	42	2.07	1.78	.94
5000-9999	79	3.82	20	3.18	19	2.78	40	1.31	1.09	.95
10,000-19,999	40	4.84	9	2.70	11	2.33	20	1.66	.92	.80
20,000 Plus	6	5.78	3	.66	2	49.57	1	1.98	.29	16.98
Highest	1000-2499		5000 9999		1000-2499		1000-2499	500-999	2500-4999	20,000 Plus
	96		20		31		49	3.06	1.78	16.98
Lowest	20,000		200-499		20,000		20,000	Below 200	Below 200	Below 500
	6		0		2		1	.48	.04	.72

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[1] Based on ratio of 4.07 for all institutions participating FY 63 and FY 64, and FY 65 and FY 66.

TABLE 3.8

MATRIX ANALYSIS OF THE RATIO OF FEDERAL GRANTS TO THE TOTAL COST OF FACILITIES AND THE PERCENT OF INCREASE IN ENROLLMENT DURING THE PERIOD FY 65 AND FY 66 FOR ALL INSTITUTIONS PARTICIPATING IN THE PROGRAM

Percent of Enrollment Increase	0.-9.9		10 - 19.9		20 - 29.9		30-Plus		All		Ratio Grants to Total Cost	Ratio Institutional Contributions to total Cost
	No.	%age	No.	%age	No.	%age	No.	%age	No.	%age		
60.0 Plus	9	.97	27	2.92	36	3.90	53	5.74	125	13.53	27.08	72.92
50.0-59.9	3	.32	9	.97	10	1.08	19	2.06	41	4.44	28.50	71.50
40.0-49.9	1	.11	6	.65	17	1.84	32	3.46	56	6.06	31.25	68.75
30.0-39.9	5	.54	17	1.84	30	3.25	52	5.63	104	11.26	30.00	70.00
20.0-29.9	3	.32	17	1.84	49	5.30	90	9.74	159	17.21	31.39	68.61
10.0-19.9	9	.97	30	3.25	61	6.60	164	17.75	264	28.57	36.10	63.90
0-9.9	2	.22	21	2.27	43	4.65	107	11.58	173	18.72	33.84	66.16
Loss	0	0	0	0	1	.11	1	.11	2	.22	30.00	70.00
Total	32	3.46	127	13.74	247	26.73	518	56.06	924	100.00	21.45	78.55
Median Percent of Enrollment Increase	34.00		27.25		23.77		19.21		21.45			

The Relationship Between Increases in Enrollment and the Ratio of Federal Contributions to Total Cost of Construction

The question here is whether and to what extent there is a relationship between the increases in enrollment during the period of the operation of the Act and the proportionate part of the total cost of capital outlay expenditures covered by federal funds. The basic data and analysis are shown in Table 3.8. The conclusions can be embodied in two direct statements based on the last two columns on the right hand margin and the bottom row of the table.

1. The higher the percentage of increase in enrollment the lower was the ratio of federal contribution to the total cost of construction projects under the Act. For example, the median ratio of federal contributions for institutions having the lowest percentages of increase in enrollment was 33.84 and for institutions having the highest percentage of increased enrollment, 27.08. For institutions receiving the lowest ratio of federal grants the median percentage of increase in enrollment was 34.00. For institutions receiving the highest ratio of federal funds, the median percentage of increase in enrollment was 19.21.
2. If a major objective of the Act is to aid in financing new facilities in proportion to increase in enrollment, either the formula for distribution of funds or the administration of the formula is deficient. The scope of the data included in this study does not afford an answer to the implied question. The need for further research and analysis, however, is indicated.

Opinion Measurements and Case Studies

As indicated in the first part of this section, the second procedure used to find answers to the major questions involved was the conducting of long distance telephone interviews with a responsible official in each of 43 institutions of higher education selected at random that had operated under the provision of the Act, and the holding of conversations in personal interviews with responsible officials in each of six institutions selected principally on the basis of convenience and nine representatives of state commissions in charge of administration of the Act in their respective states. Those interviews raised three questions relating to this section of the report. These questions and the answers obtained will be presented in the immediately succeeding paragraphs.

More or Less Funds?

Q - Would the institution have received more or less funds from non-federal sources had the funds under this Act not been available?

Institutions Interviewed by Telephone	More	Less	Same	Uncertain
Total 43	6	35	1	1
Public 22	5	15		
Private 21	1	20	0	0
Percent - All	12.2	83.6	2.1	2.1
- Public	22.8	68.2	4.5	4.5
- Private	4.8	95.2	-	-
Institutions Visited in Person				
Total 6	0	6	-	-
Public 4	0	4	-	-
Private 2	0	2	-	-
Percent - All		100.0		
- Public		100.0		
- Private		100.0		
State Commissions Visited in Person				
Total 9				
For Public Institutions	0	8	1	-
For Private Institutions	0	9	-	-

With but few exceptions, the institutions involved in the interviews and visitations report that less funds would have been available for construction of additional facilities had it not been for funds received under the Act.

The 22.8 per cent of the public institutions that reported that more funds would have been available had not funds been available under the Act, probably are merely indicating that funds were transferred to projects not eligible under the provisions of the Act. Consequently, the same total of funds for educational facilities was actually more than would have been available without the benefits of the Act. In the case of the 4.8 per cent of the private institutions there were some instances in which the official interviewed had reason to believe that if the federal sources had not been available the necessary funds would have come from private sources.

Funds Supplanted?

Q - Have federal funds supplanted other non-federal funds?

	Yes	No
Institutions Interviewed by Telephone		
Total 43	7	36
Public 22	5	17
Private 21	2	19
Percent		
Total	16.3	83.7
Public	20.0	80.0
Private	9.1	90.9
Institutions Interviewed by Person		
Total 6	0	6
Public 4	0	4
Private	0	2
Percent	0	100

	Yes	No
State Commissions Interviewed		
Total	0	9
For Public Institutions	0	9
For Private Institutions	0	9
Percent	0	100

A very large majority of the institutions reported that federal funds were not used to supplant non-federal funds. Stated conversely with relatively few exceptions federal funds were used to supplement non-federal funds. In the case of the exceptions, the same comments made under "the first question" above seem to be applicable here.

Funding of Projects

Q - Projects that would not otherwise have been funded?

	Yes	No
Institutions Interviewed by Telephone		
Total 43	42	1
Public 22	21	1
Private 21	21	0
Percent - Total	97.9	2.1
- Public	95.5	4.5
- Private	100.0	0
Institutions Interviewed in Person		
Total	6	0
Public	4	0
Private	2	0
Percent	100.0	0

State Commissions Interviewed	Yes	No
For Public Institutions	6	3
For Private Institutions	8	1
Percent - Public	66.7	33.3
- Private	90.0	10.0

By and large, the prevailing opinion is that the federal funds available under the Act were used to finance projects that would not have been funded otherwise. It is, however, of some significance that one-third of the state commissions interviewed felt that many of the projects for public institutions would have been funded even if there had been no federal funds. It seems that this situation indicates a probable need for further research.

Summary

The data from both the statistical analyses and the opinion surveys presented in this section lead to specific conclusions that are answers to the questions posed for consideration.

1. For the nation as a whole the effort of state and local governments and private sources to match the federal funds made available under the Act is well within the standards set up in the law. During the first two years of the operation of the program, the federal and non-federal contributions were 28 per cent and 72 per cent respectively.
2. Federal funds have not been used to supplant non-federal funds for financing additional college facilities; stated positively federal funds have supplemented non-federal funds.
3. Funds for college facilities have been increased under the influence of the Act. The expenditures for academic facilities by the 373 institutions for which data were available for the two-year period prior to the operation of the Act and the

two-year period of its operation show that capital outlay expenditures were 2.92 times as great during the period of operation under the Act as prior to it.

4. The Act has had relatively greater influence on expenditures for capital outlay among private institutions than among public institutions. It has stimulated private contributions to privately controlled institutions.
5. Among the various types of institutions, the most stimulating effects of the Act were on independent technical institutes, liberal arts colleges and universities in the order named.
6. Among the institutions of various sizes those in the category of 500 to 1,000 enrollment in large metropolitan areas were more favorably affected by the program under the Act than institutions in any other size category.
7. As measured by increases in capital outlay expenditures for academic facilities, the order of effectiveness of the Act in the three types of areas of location are LSMSA, outside of Metropolitan Areas, and SMSA.
8. The higher the percentage of increase in enrollment in the program under the Act, the lower was the ratio of federal contributions to the total cost of construction projects involved.

IV

THE DISTRIBUTION OF FUNDS BY INSTITUTION ACCORDING TO TYPE, SIZE, AND GEOGRAPHICAL LOCATION

Introduction

The purpose of this Section is to analyze the distribution of funds according to the type, size and geographical location of the institutions receiving assistance under the Act. Subordinate questions which are considered here include the following:

1. How were funds distributed by type and control of institutions and by title under the Act?
2. How were funds distributed according to geographical location? By OE region?[1] LSMSA?[2] SMSA?[3] Outside SMSA?
3. How were funds distributed by size of institution according to type, control and geographical location?

Amounts and Percentages of Funds Distributed to Participating Institutions

This section reports and analyzes the funds received by 986 institutions under Titles I, II and III of the Higher Education Facilities Act of 1963. The funds accounted for herein represent approximately 90 per cent of the total amount of funds distributed during the fiscal years 1964-65 and 1965-66. Titles I and II grants represented 68.25 and 14.29 per cent respectively of the total while Title III loans represented only 17.46 per cent of the total amount of funds distributed.

Funds Distributed by Title According to Type and Control of Institute

Table 4.1 shows the breakdown of funds distributed by Title and by type of institution. The largest amount of funds

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[1] Office of Education regional classifications

[2] Large Standard Metropolitan Statistical Area

[3] Standard Metropolitan Statistical Area

TABLE 4.1

AMOUNT AND PERCENTAGES OF FUNDS DISTRIBUTED TO ALL INSTITUTIONS OF HIGHER EDUCATION . . . BY TYPES . . . UNDER TITLES I, II AND III OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

Type Institution	No. of Institutions + Branch Campuses	Amount by Title			Total All Titles	Percentage of Total
		Title I	Title II	Title III		
University	172	$203,468,140	$123,807,418	$45,161,381	$372,436,939	38.38
Liberal Arts	391	218,175,503	7,433,352	83,794,982	309,403,837	31.89
Fine Arts	0	0	0	0	0	0.00
Teachers College	104	66,443,368	1,228,081	8,801,000	76,472,449	7.88
Independent Tech.	22	20,760,423	5,864,931	549,000	27,174,354	2.80
Theological[a]	8	2,677,785	0	1,171,000	3,848,785	.40
Other Independent Prof.	13	6,054,960	145,154	17,576,446	23,776,560	2.45
Junior College	256	132,598,439	0	8,263,000	140,861,439	14.52
Tech. Inst.	14	7,221,179	0	0	7,221,179	.74
Semiprof. Sch.	6	4,894,520	166,000	4,090,000	9,150,520	.94
Total	986	$662,294,317	$138,644,936	$169,406,809	$970,346,062	100.00
Percentage		68.25	14.29	17.46	100.00	

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[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

was distributed to universities with liberal arts colleges a close second. Approximately 70 per cent of the total funds were distributed to these two types of institutions. Junior colleges received approximately 14.5 per cent of the total funds distributed.

Table 4.2 includes information on the amount of funds distributed to public institutions of higher education by Title. Universities and public junior colleges in that order received the largest percentages of funds while liberal arts colleges and teachers' colleges ranked third and fourth respectively. Public institutions received 56.43 per cent of the total funds distributed, 66.14 per cent of the Title I funds, 58.5 per cent of the Title II funds and 16.75 per cent of the Title III funds.

Information about the funds distributed to private institutions is shown in Table 4.3. Private institutions received 43.57 per cent of the total amount of funds distributed to all institutions. Private liberal arts colleges received the largest amount distributed to private institutions with private universities receiving the second largest amount. Together, the private liberal arts colleges and universities received approximately 82 per cent of all the funds distributed to private institutions while private junior colleges received only 5.84 per cent of the funds.

It is significant to note that private institutions received 33.86 per cent of all Title I funds, 41.5 per cent of all Title II funds and 83.25 per cent of all Title III funds distributed to all institutions of higher learning. It appears significant that Title III funds received by private institutions represent approximately 33.35 per cent of the sum total of the Title I, II and III funds allocated to them and 83.25 per cent of all Title III funds. This suggests that the Title III section of the Act has benefited private institutions significantly in that funds have been made available through the loan provisions of this Act to supplement Title I and II grants. These data indicate that loan funds along with the grants have stimulated and encouraged extra effort on the part of private institutions to raise additional funds from private sources.

TABLE 4.2

AMOUNT AND PERCENTAGES OF FUNDS DISTRIBUTED TO PUBLIC INSTITUTIONS OF HIGHER EDUCATION BY TYPE . . . . UNDER TITLES I, II, AND III OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

Type Institution	No. of Institutions + Branch Campuses	Amount by Title			Total All Titles	Percentage of Total
		Title I	Title II	Title III		
University	110	$162,719,638	$74,974,291	$12,477,945	$250,171,874	45.69
Liberal Arts	79	79,835,005	1,501,924	3,443,000	84,779,929	15.48
Fine Arts	0	0	0	0	0	0.00
Teachers Col.	100	65,060,791	1,228,081	8,801,000	75,089,872	13.71
Independent Tech.	10	9,683,882	3,394,491	0	13,078,373	2.39
Theological	0	0	0	0	0	0.00
Other Independent Prof.	1	201,542	0	0	201,542	.04
Junior College	206	113,154,388	0	3,021,000	116,175,388	21.21
Tech. Inst.	14	7,221,179	0	0	7,221,179	1.32
Semiprof. Sch.	1	192,645	0	620,000	812,645	.15
Total	521	$438,069,070	$81,098,787	$28,362,945	$547,530,802	100.00
Percentage	52.84	66.14	58.50	16.75	56.43% of total funds	

TABLE 4.3

AMOUNT AND PERCENTAGES OF FUNDS DISTRIBUTED TO PRIVATE INSTITUTIONS OF HIGHER EDUCATION BY TYPE . . . UNDER TITLES I, II AND III OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

Type Institution	No. of Institutions + Branch Campuses	Amount by Title			Total All Titles	Percentage of Total
		Title I	Title II	Title III		
University	60	$ 40,748,502	$ 48,833,127	$ 32,683,436	$122,265,065	28.92
Liberal Arts	312	138,340,498	5,931,428	80,351,982	224,623,908	53.13
Fine Arts	0	0	0	0	0	0.00
Teachers Col.	4	1,382,577	0	0	1,382,577	.33
Independent Tech.	12	11,076,541	2,470,440	549,000	14,095,981	3.33
Theological[a]	8	2,677,785	0	1,171,000	3,848,785	.91
Other Ind. Prof.	12	5,853,418	145,154	17,576,446	23,575,018	5.58
Junior College	52	19,444,051	0	5,242,000	24,686,051	5.84
Semiprof. Sch.	5	4,701,875	166,000	3,470,000	8,337,875	1.97
Tech. Institute	0	0	0	0	0	0.00
Total	465	$224,225,247	$57,546,149	$141,043,864	$422,815,260	100.00
Percentage	47.16	33.86	41.50	83.25	43.57% of total funds	

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[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

Distribution of Funds by Geographical Location

The analysis of funds distributed to institutions by regional location is based on regional definitions used by the United States Office of Education. OE region numbers and the states included in the various regions can be found in Appendix A.

Other location parameters used are the Large Standard Metropolitan Statistical Area, the Standard Metropolitan Statistical Area and locations outside of these areas. The list of cities included in the LSMSA and SMSA locations are shown in Appendix B. An institution's zip code number was used to determine the location of an institution in a particular area.

Information in Table 4.4 shows that Region 5 which includes the States of Illinois, Indiana, Michigan, Ohio and Wisconsin received 19.79 per cent of the funds distributed to all institutions. Region 2 which includes the States of Delaware, New Jersey, New York and Pennsylvania received 19.09 per cent of the total funds.

Institutions located in the Large Standard Metropolitan Statistical Areas of the United States received 22.25 per cent of the total funds; those located in the Standard Metropolitan Statistical areas received 23.91 per cent and those located outside of these large cities received 53.85 per cent. Institutions in the large cities received 46.15 per cent of the total per cent of funds distributed.

Further study of available data indicates that California institutions received 9.55 per cent of all funds distributed to all institutions. New York institutions received 9.50 per cent of the total while Illinois, Texas and Ohio institutions ranked third, fourth and fifth among the states with 6.59, 5.20 and 4.77 per cent respectively. Together, institutions in these five states received 35.61 per cent of the total amount of funds distributed. Table 4.5 includes information on the distribution of funds by states.

TABLE 4.4

AMOUNT AND PERCENTAGE OF FUNDS DISTRIBUTED TO ALL INSTITUTIONS OF HIGHER EDUCATION UNDER TITLES I, II AND III OF THE HIGHER EDUCATION FACILITIES ACT BY OE REGION, LSMSA, SMSA AND OUTSIDE SMSA

OE Region and SMSA	Title I		Title II		Title III		Total	
	Amount	Per-centage	Amount	Per centage	Amount	Per-centage	Amount	Per-centage
Region 1	$40,489,902	6.11	$10,987,022	7.92	$26,599,446	15.70	$78,076,370	8.05
Region 2	118,425,576	17.88	28,547,684	20.59	38,219,300	22.56	185,192,560	19.09
Region 3	67,147,002	10.14	7,029,053	5.07	31,077,557	18.34	105,253,612	10.85
Region 4	55,853,340	8.43	14,243,092	10.27	6,378,783	3.77	76,475,215	7.88
Region 5	131,254,463	19.82	34,044,150	24.55	26,752,136	15.79	192,050,749	19.79
Region 6	58,850,417	8.89	9,569,913	6.90	9,849,000	5.81	78,269,330	8.07
Region 7	73,956,836	11.17	11,815,461	8.52	15,336,000	9.05	101,108,297	10.42
Region 8	18,263,283	2.76	2,686,410	1.94	817,587	.48	21,767,280	2.24
Region 9	98,053,498	14.81	19,722,151	14.22	14,377,000	8.49	132,152,649	13.62
Totals	$662,294,317	100.00	$138,644,936	100.00	$169,406,809	100.00	$970,346,062	100.00
LSMSA	131,099,749	19.79	46,878,604	33.81	37,889,300	22.37	215,867,653	22.25
SMSA	167,929,343	25.36	23,838,291	17.19	40,214,945	23.74	231,982,579	23.91
Other	363,265,225	54.85	67,928,041	48.99	91,302,564	53.90	522,495,830	53.85

TABLE 4.5

DISTRIBUTION OF FUNDS TO THE STATES UNDER THE HIGHER EDUCATION FACILITIES ACT OF 1963 BY TITLES, TOTAL AMOUNTS, AND PERCENTAGES

State	Title I Amount	Title I Percentage	Title II Amount	Title II Percentage	Title III Amount	Title III Percentage	Total Amount	Total Percentage
Region I								
Conn.	$ 7,356,157	1.11	$ 1,074,098	.77	$ 5,071,000	2.99	$13,501,255	1.39
Maine	2,456,703	.37	590,884	.43	7,741,000	4.57	10,788,587	1.11
Mass.	20,578,156	3.11	8,191,437	5.91	11,159,446	6.59	39,929,039	4.11
N. Hamp.	2,051,278	.31	0	0	0	0	2,051,278	.21
R. Isl.	5,483,111	.83	861,176	.62	0	0	6,344,287	.65
Vermont	2,564,497	.39	269,427	.19	2,628,000	1.55	5,461,924	.56
Region 2								
Delaware	1,731,986	.26	535,264	.39	0	0	2,267,250	.23
N. Jersey	18,236,239	2.75	3,597,086	2.59	5,879,300	3.47	27,712,625	2.86
N. York	57,011,089	8.61	18,933,398	13.66	16,227,000	9.58	92,171,487	9.50
Pa.	41,446,262	6.26	5,481,936	3.95	16,113,000	9.51	63,041,198	6.50
Region 3								
D. C.	4,114,153	.62	2,104,491	1.52	5,758,000	3.40	11,976,644	1.23
Ky.	10,495,423	1.58	1,506,255	1.09	12,416,000	7.33	24,417,678	2.52
Ma.	9,571,249	1.45	666,267	.48	0	0	10,237,516	1.06
N. Car.	16,446,515	2.48	1,521,634	1.10	2,721,000	1.61	20,689,149	2.13
Va.	12,859,525	1.94	0	0	1,986,000	1.17	14,845,523	1.53
W. Va.	7,045,345	1.06	829,806	.60	483,612	.29	8,358,763	.86
Puerto R.	6,606,068	1.00	400,600	.29	7,712,945	4.55	14,719,613	1.52
Virgin I.	8,724	0	0	0	0	0	8,724	0
Region 4								
Ala.	7,976,817	1.20	1,303,859	.94	250,000	.15	9,530,676	.98
Fla.	14,437,500	2.18	3,377,924	2.44	3,981,783	2.35	21,797,207	2.25
Ga.	8,291,603	1.25	6,447,183	4.65	0	0	14,738,786	1.52

(To be continued on next page)

TABLE 4.5 (Continued)

DISTRIBUTION OF FUNDS TO THE STATES UNDER THE HIGHER EDUCATION FACILITIES ACT OF 1963 BY TITLES, TOTAL AMOUNTS, AND PERCENTAGES

	Title I		Title II		Title III		Total	
State	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Region 4								
Miss.	$ 7,530,891	1.14	$ 235,703	.17	0	0	$ 7,766,594	.80
S. Car.	7,205,279	1.09	2,584,248	1.86	$1,267,000	.75	11,056,527	1.14
Tenn.	10,411,250	1.57	294,175	.21	880,000	.52	11,585,425	1.19
Region 5								
Ill.	34,050,638	5.14	13,153,498	9.49	16,728,136	9.87	63,932,272	6.59
Ind.	14,828,676	2.24	4,018,451	2.90	4,418,000	2.61	23,265,127	2.40
Mich.	30,152,792	4.55	4,341,496	3.13	333,000	.20	34,827,288	3.59
Ohio	35,378,616	5.34	10,158,026	7.33	741,000	.44	46,277,642	4.77
Wis.	16,843,741	2.54	2,372,679	1.71	4,532,000	2.68	2,374,820	2.45
Region 6								
Iowa	$10,717,685	1.62	$1,020,426	.74	$6,797,000	4.01	$18,535,111	1.91
Kansas	8,465,498	1.28	1,442,476	1.04	980,000	.58	10,887,974	1.12
Minn.	14,615,887	2.21	4,071,232	2.94	0	0	18,687,119	1.93
Mo.	14,506,464	2.19	2,634,614	1.90	876,000	.52	18,017,078	1.86
Neb.	5,011,207	.76	401,165	.29	600,000	.35	6,012,372	.62
N. Dak.	2,462,978	.37	0	0	596,000	.35	3,058,978	.32
S. Dak.	3,070,698	.46	0	0	0	0	3,070,698	.32
Region 7								
Ark.	$8,067,348	1.22	0	0	3,878,000	2.29	11,945,348	1.23
La.	13,338,135	2.01	4,925,494	3.55	2,962,000	1.75	21,225,629	2.19
N. Mex.	4,003,063	.60	241,921	.17	0	0	4,244,984	.44
Okl.	9,814,351	1.48	478,735	.35	2,985,000	1.76	13,278,086	1.37
Texas	38,733,939	5.85	6,169,311	4.45	5,511,000	3.25	50,414,250	5.20
Region 8								
Colo.	$ 7,681,239	1.16	$ 264,166	.19	$ 723,000	.43	$ 8,668,405	.89
Idaho	2,605,044	.39	0	0	94,587	.06	2,699,631	.28
Mont.	3,024,143	.46	0	0	0	0	3,024,143	.31
Utah	4,676,568	.71	2,009,244	1.45	0	0	6,685,812	.69
Wyo.	276,289	.04	413,000	.30	0	0	689,289	.07

(To be continued on next page)

TABLE 4.5 (Continued)

DISTRIBUTION OF FUNDS TO THE STATES UNDER THE HIGHER EDUCATION FACILITIES ACT OF 1963 BY TITLES, TOTAL AMOUNTS, AND PERCENTAGES

State	Title I Amount	Title I Percentage	Title II Amount	Title II Percentage	Title III Amount	Title III Percentage	Total Amount	Total Percentage
Region 9								
Alaska	$ 209,577	.03	$ 1,263,094	.91	$ 95,000	.06	$ 1,567,671	.16
Arizona	6,381,514	.96	1,593,787	1.15	0	0	7,975,301	.82
Cal.	70,538,859	10,65	14,471,942	10.44	7,703,000	4.55	92,713,801	9.55
Hawaii	2,324,304	.35	1,088,000	.76	1,512,000	.89	4,924,304	.51
Nevada	999,901	.15	116,011	.08	0	0	1,115,912	.12
Oregon	6,473,628	.98	1,064,908	.77	1,155,000	.68	8,693,536	.90
Wash.	11,125,715	1.68	124,409	.09	3,912,000	2.31	15,162,124	1.56
Guam	0	0	0	0	0	0	0	0
All Regions	662,294,317	100.00	138,644,936	100.00	169,406,809	100.00	970,346,062	100.00

Distribution of Titles I and II Funds by Type of Institution and Location

Table 4.6 provides information on the distribution of Titles I and II funds by type of institution located in Large Standard Metropolitan Statistical Areas, Standard Metropolitan Statistical Areas and those outside of these Metropolitan areas. The data reveal that universities received 51.09 per cent of the funds distributed to institutions within the LSMSA's, liberal arts colleges received 32.53 per cent and junior colleges 7.80 per cent. Of the funds distributed to institutions located in SMSA's, the universities received 39.84 per cent of the total while liberal arts colleges received 32.83 per cent and junior colleges 16.35 per cent. Data about institutions located outside of the metropolitan areas reveal that universities received 37.09 per cent; liberal arts colleges, 24.29 per cent; and junior colleges, 20.26 per cent.

The data also show that institutions located in LSMSA's received 22.22 per cent of all the grant funds under Titles I and II. Institutions located in SMSA's received 23.94 per cent of the total funds. Those located outside of the metropolitan areas received 53.83 per cent of the total funds. All together, institutions located in the metropolitan areas received 46.16 per cent of all the grant funds distributed under Titles I and II of the Act.

Universities in the metropolitan areas received 51.12 per cent of the total funds distributed to all universities. Liberal arts colleges in metropolitan areas received 53.56 per cent of the funds distributed to all liberal arts colleges while junior colleges in the metropolitan areas received 34.11 of the funds distributed to all junior colleges.

Distribution of Titles I and II Funds by Size of Institution and Location

Data in Table 4.7 reveal that the largest percentage of funds was distributed to institutions in the size range from 1000 to 2499 students. Of the funds distributed to institutions in that size class, 12.32 per cent was distributed to institutions in the Large Standard Metropolitan Statistical Areas, 29.91 per cent to

TABLE 4.6

AMOUNT AND PERCENTAGE OF FUNDS DISTRIBUTED TO ALL INSTITUTIONS OF HIGHER EDUCATION UNDER TITLES I AND II OF THE HIGHER EDUCATION FACILITIES ACT...BY SMSA AND BY TYPE OF INSTITUTION

Type of Institution And SMSA	LSMSA[a]		SMSA[b]		Outside		Total	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
University	$ 90,924,363	51.09	$ 76,408,020	39.84	$159,943,175	37.09	$327,275,558	40.86
Liberal Arts	57,903,348	32.53	62,966,316	32.83	104,739,191	24.29	225,608,855	28.17
Fine Arts	0	0.	0	0.	0	0.	0	0.
Teachers College	3,537,241	1.99	10,518,727	5.49	53,615,481	12.43	67,671,449	8.45
Ind. Tech	3,941,201	2.21	5,680,040	2.96	17,004,113	3.94	26,625,354	3.32
Theological [c]	215,381	.12	0	0.	2,462,404	.57	2,677,785	.33
Other Independent Profess.	2,504,581	1.41	1,326,033	.69	2,369,500	.55	6,200,114	.77
Junior College	13,880,283	7.80	31,360,324	16.35	87,357,832	20.26	132,598,439	16.55
Tech. Institute	500,000	.28	3,212,254	1.68	3,508,925	.81	7,221,179	.90
Semiprof. School	4,571,955	2.57	295,920	.15	192,645	.04	5,060,520	.63
Totals	$177,978,353	100.00	$191,767,634	100.00	$431,193,266	100.00	$800,939,253	100.00

[a] Large Standard Metropolitan Statistical Areas--

[b] Standard Metropolitan Statistical Areas--

[c] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

Note: All institutions are not included. Only those are included for which complete data were available.

TABLE 4.7

AMOUNT AND PERCENTAGE OF FUNDS DISTRIBUTED TO ALL INSTITUTIONS OF HIGHER EDUCATION UNDER TITLES I AND II OF THE HIGHER EDUCATION FACILITIES ACT...BY SMSA AND BY SIZE OF INSTITUTION

e of titution SMSA	No. Inst. and Branch Campus	LSMSA		SMSA		Outside		Total	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
low 200	63	$ 10,714,974	6.02	$ 10,799,295	5.63	$26,877,248	6.23	$ 48,391,517	6.04
0-499	105	3,178,251	1.79	6,820,106	3.56	24,163,524	5.60	34,161,881	4.27
0-999	222	28,369,216	15.94	27,266,879	14.22	55,969,150	12.98	111,605,245	13.93
000-2,499	287	23,080,882	12.97	56,042,380	29.22	108,268,970	25.11	187,392,232	23.40
500-4,999	138	30,469,812	17.12	31,227,495	16.28	81,481,625	18.90	143,178,932	17.88
000-9,999	106	38,545,846	21.66	29,831,665	15.56	83,914,317	19.46	152,291,828	19.01
,000-19,999	51	35,523,777	19.96	26,236,673	13.68	49,518,432	11.48	111,278,882	13.89
,000-Plus	6	8,095,595	4.55	3,543,141	1.85	1,000,000	.23	12,638,736	1.58
tals	978	$ 177,978,353	100.00	$191,767,634	100.00	$431,193,266	100.00	$800,939,253	100.00

institutions in the Standard Metropolitan Statistical Areas and 57.77 per cent was distributed to institutions outside of the Metropolitan areas. Approximately 60 per cent of all Title I and II funds were distributed to institutions whose size ranged between 1000 and 9999 students.

Distribution of the Amount and Percentage of Titles I and II Funds Related to FTES Enrollments in Participating Institutions

Table 4.8 contains data that relate the size of institutions at the time applications for funds were made to the amount and percentage of Title I and II funds approved for distribution. The data reveal that the institutions in the size range from 5,000 to 9,999 FTE enrolled the largest percentage of students at the time applications were made but ranked second in the percentage of funds received. Institutions in the 1,000 to 2,499 FTE category received the largest percentage of funds but ranked fourth in the percentage of students enrolled. Data presented also indicate that smaller institutions enrolling approximately 43 per cent of the FTE received approximately 66 per cent of the Title I and II Funds.

Figure 4.1 is a graphical representation of the data presented in Table 4.8. This representation points to the conclusion that the smaller institutions have received a larger percentage of funds than have the larger institutions.

Summary and Conclusions

This Section has analyzed the distribution of funds according to type, size and geographical location of the institutions receiving funds under the Act. Significant findings of the Section are as follows:

1. Titles I, II and III grants represented 68.25, 14.29 and 17.46 per cent respectively of the total funds distributed.
2. Universities and liberal arts colleges received 70 per cent of the total funds distributed with universities receiving approximately 38 per cent,

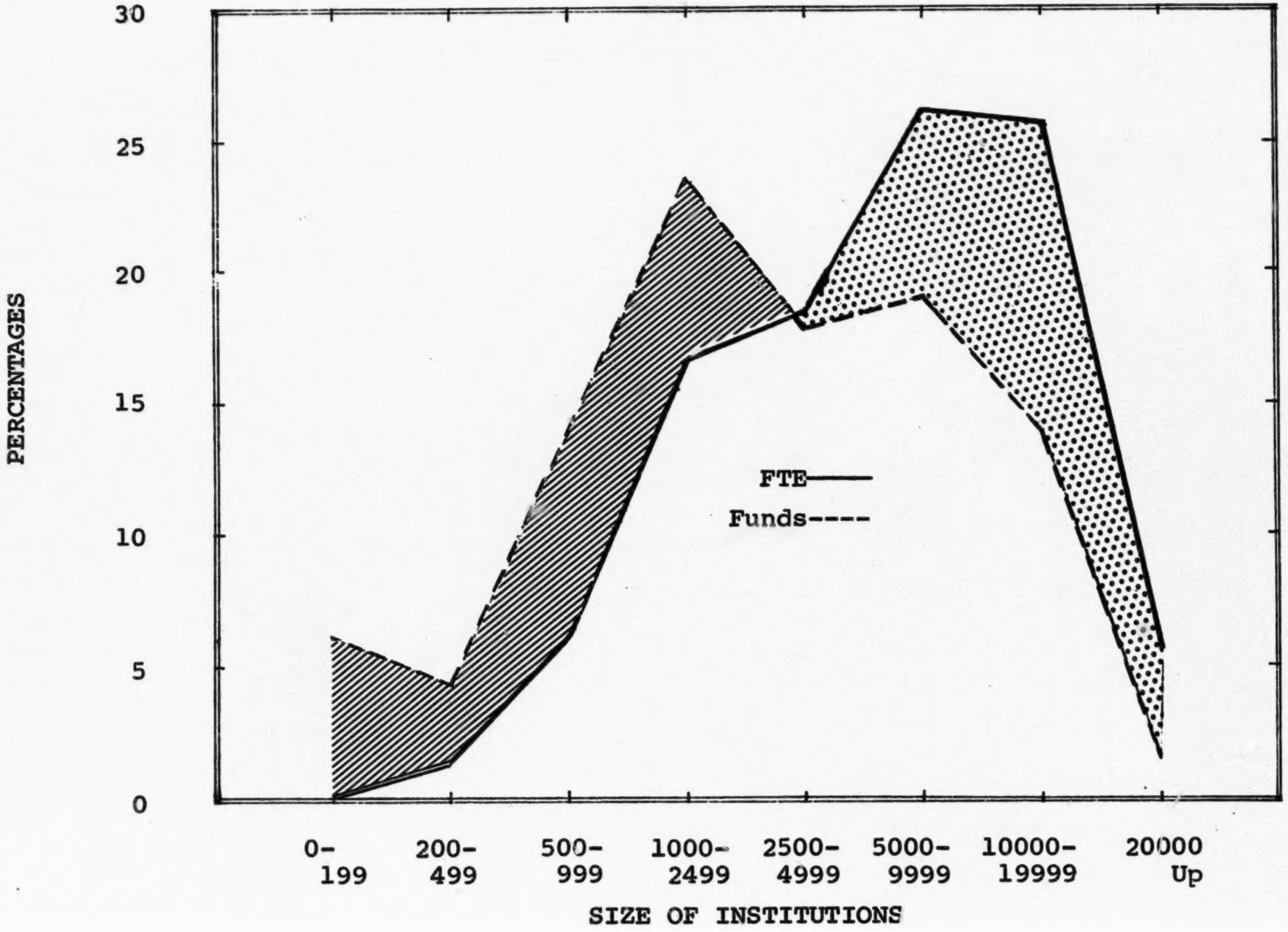
TABLE 4.8

NUMBER OF INSTITUTIONS, PERCENTAGE OF ENROLLMENT AND AMOUNT AND PERCENTAGE OF TITLES I AND II FUNDS DISTRIBUTED TO ALL INSTITUTIONS OF HIGHER EDUCATION...... BY SIZE OF INSTITUTION

Size of Institution	No. Inst.	Total FTE This Category	Percentage FTE	Rank	Amount Funds	Percentage Funds	Rank
Below 200	63	2,351	.09	8	$ 48,391,517	6.04	6
200 - 499	105	38,944	1.44	7	34,161,881	4.27	7
500 - 999	224	166,221	6.14	5	111,605,245	13.93	4
1,000 - 2,499	293	451,462	16.68	4	187,392,232	23.40	1
2,500 - 4,999	138	499,815	18.46	3	143,178,932	17.88	3
5,000 - 9,999	106	706,973	26.12	1	152,291,828	19.01	2
10,000 - 19,999	51	691,699	25.55	2	111,278,882	13.89	5
20,000 Plus	6	149,678	5.53	6	12,638,736	1.58	8
Totals	986	2,707,143	100.00		800,939,253	100.00	

FIGURE 4.1

SIZES OF INSTITUTIONS AS RELATED TO THE PERCENTAGES OF FTE AND FUNDS RECEIVED BY ALL HIGHER EDUCATION INSTITUTIONS



the largest share.

3. Junior colleges received 14.5 per cent of the total funds distributed. All two-year institutions received 16.2 per cent of the total.
4. Public institutions of higher education received approximately 56 per cent of the total funds distributed; 66.14 per cent of the Title I funds; 58.5 per cent of the Title II funds and 16.75 per cent of the Title III funds.
   a. The universities received the largest percentage of funds distributed to public institutions.
   b. Junior colleges ranked second with 21.21 per cent.
   c. Liberal arts colleges and teachers' colleges ranked third and fourth, respectively.
5. Private institutions received approximately 44 per cent of the total funds distributed; 33.86 per cent of all Title I funds; 41.5 per cent of all Title II funds; and 83.25 per cent of all Title III funds.
   a. Liberal arts colleges received the largest percentage of funds distributed to private institutions with universities second in rank order.
   b. Private junior colleges received 5.84 per cent of the total funds allocated to private institutions.
6. Institutions in five states received 36.61 per cent of the total funds distributed. These states included California, New York, Illinois, Texas and Ohio which received 9.55, 9.50, 6.59, 5.20 and 4.77 per cent of the funds respectively.
7. Institutions in the metropolitan areas of the United States received 46.16 per cent of the Title I, II and III funds. Those institutions located in the Large Standard Metropolitan Statistical Areas received 22.25 per cent of the funds and those in the Standard Metropolitan Statistical Areas received 23.91 per cent.
8. Universities in the metropolitan areas received 51.12 per cent of the total Title I and II funds distributed

to all universities; liberal arts colleges, 53.56 per cent of the funds distributed to all liberal arts colleges; and junior colleges, approximately 34.11 per cent of the funds distributed to all junior colleges.

9. Institutions in the size range from 1,000 to 2,499 FTE students received the largest percentage of Titles I and II funds.
10. Institutions with 1,000 to 9,999 students received approximately 60 per cent of all Title I and II grant funds.
11. Institutions in the size category 1,000 to 2,499 FTE students received the largest percentage of funds but ranked fourth in the percentage of total students enrolled.
12. Institutions in the size category from 5,000 to 9,999 FTE enrolled the largest percentage of students but ranked second in the percentage of funds received.

In conclusion, the data indicate that:

1. Universities and liberal arts colleges are the main benefactors of the program.
2. Junior colleges have benefited to the extent that was anticipated in the Act.
3. Public institutions have received more funds from Titles I and II while private institutions have received the greatest assistance from the Title III section of the Act.
4. Smaller institutions enrolling a smaller percentage of FTE students have received more funds than the larger institutions.
5. Private junior colleges have benefited to a much lesser extent than their public counterparts.
6. Institutions located in the metropolitan areas of the nation have benefited only to a slightly lesser extent than the institutions located outside of the metropolitan areas.

V

IMPACT OF THE ACT ON THE UTILIZATION OF ACADEMIC FACILITIES

Introduction

The purpose of this Section is to examine the effect of the Act upon the utilization of academic facilities at institutions of higher education which have received grants under Title I. The following subordinate questions will be considered:

1. What effect does the time lag between the grant award and the completion of the building have on utilization?
2. What effect does the replacement and conversion of existing facilities have on the utilization of academic space?
3. What impact does the construction of special types of facilities have on utilization?
4. What measures of the utilization of academic facilities are appropriate?
5. What impact does the projected capacity enrollment ratio have on the utilization of academic space? Does the impact vary between type of institutions, the size of institutions, or the OE regions in which the institutions are treated?

The subordinate questions will be answered through the use of case studies of states and institutions of higher education and through the analysis of capacity enrollment ratio data available from the application forms.

Effect of Construction Time Lag on Utilization

The greatest problem in making any true comparison of the effect of the Higher Education Facilities Act upon utilization of academic facilities is the simple fact that the great majority of the facilities for which funds have been granted are not yet constructed and occupied by students.

Facilities Planning Schedules

A rule of thumb used by many college and university administrators for scheduling facilities planning is -- two years to develop education specifications and program requirements, two years to construct the building. In some cases the first two steps may be shortened to one year, but any less time for thorough consideration of needs generally leads to inaccurate or poor planning of facilities.

Higher Education Facilities Act Time Schedule

An institution of higher education must have preliminary drawings completed and approved before it can submit an application for funds. Depending upon the availability of funds and the need for the facility (as evidenced by a high score on the criteria of the individual State Plan) a State Commission may take from two months to a year to make a recommendation to OSOE. (The New York State Commission has several institutions which have had an application pending which has not been successful during a period of two years.) The U. S. Office of Education will generally take four to six months to process the grant award or loan approval before construction can begin, if the final working drawings and specifications are ready as bidding documents. Bidding procedures may take another two months and most construction requires at least 18 months for completion.

Therefore, with an excellent application and a minimum of "slow-downs," an institution may hope to occupy the facility within a 26-month period from the development of preliminary drawings and submission of an application, but will generally experience a three-year wait between preliminary drawings and completion of the facility.

Case Studies

New York University received a Higher Education Facilities Act Title I grant award before July 1, 1965 and subsequently has also received a Title II grant and a Title III loan for a library building to be constructed on their Washington Square Campus. Several lawsuits have delayed the beginning of construction until the summer of 1967 and the building will take almost three years to construct. In the meantime, other facilities are overcrowded since the organizational units which planned to move into space vacated by the old library facilities are delayed until the new construction is complete.

Studies in Oklahoma in 1963[1] and 1966[2] show an increase of almost 18,000 students with a comparable increase of only 23 classrooms and 3,098 additional student stations. The number of laboratories has actually decreased as research programs have expanded and there are 1,500 less laboratory stations. This action has improved the scheduled use of classrooms by four hours per week and the use of laboratories by one hour per week. The impact of the Higher Education Facilities Act space is yet to come and will only begin to appear in the 1967-68 academic year.

The Arkansas State Commission has made excellent space utilization and inventory studies[3] for the last three years. Their statewide classroom and laboratory utilization, measured in room hours, has generally increased each year. Yet, grants of approximately $29 million for 34 buildings has not significantly increased the space in classrooms, laboratories, or libraries. The impact of the new construction will begin to be felt this next academic year as construction projects begin to be completed.

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[1] Physical Facilities for Higher Education in Oklahoma, Self-Study of Higher Education in Oklahoma - Report 5, Oklahoma State Regents for Higher Education, 1964.

[2] Letter and tables from John Cleek, Federal Programs Office, Oklahoma State Regents for Higher Education, May 5, 1967.

[3] Space Utilization Study of Arkansas Colleges and Universities, The Commission on Coordination of Higher Educational Finance, Fall 1964, 1965, 1966.

Effect of the Replacement and Conversion of Facilities on Utilization

Many institutions have suffered for years with facilities which should have been demolished; for example, post war barracks, quonsets and other temporary facilities. Community colleges have shared space with high schools. Other institutions have rented or leased space in office buildings, warehouses, churches, synogogues, or stores. The construction of the new facilities simply allow the old space to be vacated without greatly increasing utilization of the total facilities.

For many years institutions have been able to "sell" their "need" for classroom and laboratory space to legislators and donors, but it has been extremely difficult to impress the same persons on the need for office space, research space, physical plant space, etc. Thus, an institution may build new classrooms and laboratories and convert the old space to non-academic purposes without improving utilization of facilities.

Case Studies

Hartwick College has received two Title I grants. The first grant was for a new library which will be in operation for the first time in September, 1967. The space vacated by the move of the library to the new building will be converted into much needed administrative office space. The second grant is assisting in the construction of a physical education building. The old frame building will be demolished as soon as possible as it is of no assistance to the institution in its present condition. Thus, the construction of two new buildings will not have any influence upon the utilization of classroom and laboratory space.

Monroe Community College now occupies an old high school building which had been condemned for education purposes several years ago. Their new campus has been under construction for two years and the college will be able to vacate and demolish the old building when they move to the new campus this fall.

Impact of Special Facilities on Utilization

The construction of special facilities such as libraries, gymnasia, faculty offices, media centers, etc. have little impact on normal space utilization since these buildings contain very little classroom and laboratory space. This condition is pointed out by Mr. William D. Jones, Space Utilization Analyst, Utah State Building Board, in a recent letter. He said " . . . buildings funded by Title I and now in use are exclusively libraries and therefore no changes have resulted in the space utilization data at campuses where these buildings have been completed."

Measures of Utilization of Academic Facilities

Mr. Jones of Utah also said, "In Utah, we conduct space utilization studies yearly and have done so for the past five years. However, these studies are of general classrooms and teaching laboratories only. No attempt has been made to figure utilization on a capacity/enrollment ratio, square feet per FTE enrollment, or any other method.

Almost all studies of space utilization made by institutions of higher education or statewide surveys of institutions of higher education in the last decade are closely identified with the work of Russell and Doi.[4] Thus, utilization of academic facilities in most studies refers to the utilization of classroom and laboratory space measured in terms of the number of hours per week the room is assigned to classes and the stations are occupied. The number of hours are usually converted to percentages based upon the total weekly hours deemed appropriate by the persons making the study or survey and duly compared to the "national averages" provided.

An Illinois[5] survey shows that the eight public universities have less than 22 per cent of their non-residential net assignable area in classrooms and teaching laboratories.

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[4] Russell, John Dale and Doi, James I., Manual for Studies of Space Utilization in Colleges and Universities, American Association of Collegiate Registrars and Admissions Officers, 1957.

[5] State-Wide Space Survey, Board of Higher Education, State of Illinois, 1966.

The private universities show less than 28 per cent and the private four-year colleges have approximately 38 per cent of their net assignable space in the classroom and teaching laboratory space classification. Comparable figures from other institutions of higher education and from other states verify the fact that the normal utilization study is made of a relatively small proportion of the total space necessary to operate the academic programs of a college or university.

In order to more appropriately show the direct relation of the use of the total academic space, utilization specialists have experimented with the space per student concept (net assignable academic square feet per full-time equivalent student) and are developing space factors for the measurement and projection of space needs. (The space factor concept relates a unit of space to a projectable unit such as the student clock hour, number of library volumes, full-time equivalent faculty and staff, etc.)

The Higher Education Facilities Act uses a compromise utilization factor entitled the capacity/enrollment ratio. The ratio is the total amount of instructional and library space (assignable area of classrooms, laboratories, other teaching rooms including gymnasia, faculty offices, and library space) divided by the total number of student clock hours (a class of 30 students meeting for a 50-minute period three times a week, generates 90 student clock hours) taught in the space. The capacity/enrollment ratio, therefore, includes a higher per cent of the total academic space than the usual classroom and laboratory utilization studies but also contains the inequities of the comparison of a small college which has a large gymnasium used for instructional purposes to the large college which can make much better use of the same amount of required space, or when compared to the college which offers no physical education courses and shows no gymnasium space.

Impact of the Projected Capacity/Enrollment Ratio on Utilization

As stated above, the capacity/enrollment ratio is an indicator of the utilization of more than classroom and laboratory space. The ratio also includes other teaching areas such as gymnasia, library space and faculty office space. If the average student clock hours per full-time equivalent student at an institution is known, the ratio can also be converted into a factor of the instructional and library space per student. (For example, a student with an average of 18 student clock hours per week on a campus with a capacity/enrollment ratio of 3.00 would indicate 54 square feet of instructional and library space per student.)

In order to project a capacity/enrollment ratio for a campus when it is probable that a building will be completed and in use, the computer was programmed to compute the existing capacity/enrollment ratio from the existing instructional and library space and student clock hours. The projected capacity/enrollment ratios were developed by using the projected instructional and library space as shown in the application and the student clock hours which were projected by using the projected enrollment increase in four years times the existing average student clock hour figure.

The projected capacity/enrollment ratio is conservative in that the application does not include data on facilities to be constructed with other than Higher Education Facilities Act funds and the computer cannot guarantee that the student clock hour figure per student will remain constant.

Type of Institution

Table 5.1 illustrates the existing and projected capacity/enrollment ratios for the OSOE standard type of institution. Only the university grouping indicates a lower projected capacity/enrollment ratio. This may well be because the impact of Title II grants (to graduate schools) is not shown in this table.

The semi-professional school grouping shows the largest increase, more than doubling the existing space. It should be noted that four of the groupings of the projected capacity/enrollment ratio are larger than the largest current capacity/enrollment ratio.

TABLE 5.1

CURRENT AND PROJECTED CAPACITY/ENROLLMENT RATIO . . . BY TYPE OF INSTITUTIONS RECEIVING GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

Type of	Capcity Enrollment	Ratio
Institution	Current	Projected
University	3.13	2.99
Liberal Arts	2.93	3.48
Fine Arts	I[a]	I[a]
Teachers College	2.85	3.12
Independent Technological	3.11	3.33
Theological[b]	2.91	4.10
Other Independent Professional	1.70	2.08
Junior College	1.89	2.60
Technical Institute	1.91	2.03
Semiprofessional School	1.51	3.26
Total	2.80	3.13

[a] Data incomplete.

[b] Funds distributed represents aid to undergraduate liberal arts components of the institution's program.

State and Region

The capacity enrollment ratio is shown for all states and OE regions in Table 5.2. Region 3 shows the largest increase from current to projected capacity/enrollment ratio. The smallest increase is in Region 7. It is significant that all regions have larger projected capacity/enrollment ratios.

Size of Institution

The data contained in Table 5.3 show that the private institutions projected capacity/enrollment ratio is considerably larger than the public institutions. The reason for the larger increase in private institutions is that while the projected enrollment increase in public institutions is approximately four times that of private institutions, the public institutions will only add twice the amount of instructional and library space.

TABLE 5.2

CURRENT AND PROJECTED CAPACITY/ENROLLMENT RATIO . . . BY OFFICE OF EDUCATION, REGION, AND BY STATE FOR INSTITUTIONS RECEIVING GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

OE Region and State	Capacity Enrollment Ratio	
	Current	Projected
Region 1	2.96	3.66
Connecticut	2.55	3.45
Maine	3.52	4.28
Massachusetts	2.72	3.13
New Hampshire	3.06	3.26
Rhode Island	4.79	4.61
Vermont	2.43	3.45
Region 2	2.46	2.89
Delaware	4.93	5.14
New Jersey	2.08	2.24
New York	2.36	2.66
Pennsylvania	2.78	3.61
Region 3	3.15	3.94
District of Columbia	2.76	2.85
Kentucky	3.05	3.10
Maryland	2.39	3.96
North Carolina	3.97	4.17
Virginia	3.08	4.38
West Virginia	2.78	5.34
Puerto Rico	2.11	2.31
Virgin Islands	3.06	6.62
Region 4	2.50	3.15
Alabama	1.32	3.11
Florida	1.81	2.26
Georgia	2.51	7.39
Mississippi	3.06	3.03
South Carolina	3.26	3.92
Tennessee	2.99	3.03
Region 5	2.63	3.04
Illinois	2.85	3.54
Indiana	3.54	3.67
Michigan	2.73	3.47
Ohio	2.22	2.27
Wisconsin	2.27	2.58

(To be continued on next page)

TABLE 5.2 (Continued)

CURRENT AND PROJECTED CAPACITY/ENROLLMENT . . . BY OFFICE OF EDUCATION, REGION, AND BY STATE FOR INSTITUTIONS RECEIVING GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

OE Region and State	Capacity/Enrollment	Ratio
	Current	Projected
Region 6	3.03	3.58
Iowa	2.78	3.96
Kansas	3.32	3.54
Minnesota	3.56	4.07
Missouri	2.73	3.03
Nebraska	3.25	3.08
North Dakota	2.81	4.90
South Dakota	2.46	2.97
Region 7	3.01	3.07
Arkansas	3.46	3.35
Louisiana	2.56	2.99
New Mexico	3.99	3.55
Oklahoma	3.20	3.44
Texas	2.86	2.87
Region 8	3.51	3.76
Colorado	3.48	3.82
Idaho	4.64	4.18
Montana	3.31	3.75
Utah	2.33	2.80
Wyoming	2.29	2.66
Region 9	2.58	2.76
Alaska	1.54	2.12
Arizona	1.36	2.10
California	2.26	2.45
Hawaii	I[a]	I[a]
Nevada	I[a]	I[a]
Oregon	2.94	3.33
Washington	3.87	4.07
Guam	I[a]	I[a]
All Regions	2.80	3.13

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[a] Incomplete data.

The other significant item is the definite trend showing the large increase in the capacity/enrollment ratio in the smaller institutions steadily decreasing as institutions increase in size. This trend is particularly evident in the enrollment groupings of all institutions.

TABLE 5.3

CURRENT AND PROJECTED CAPACITY/ENROLLMENT RATIO . . . BY CONTROL AND BY SIZE OF INSTITUTIONS RECEIVING GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963

Size	Capacity Enrollment Current	Projected	Ratio Difference
Below 200	1.76	2.83	+1.07
200-499	2.79	4.15	+1.36
500 - 999	2.79	2.32	- .47
1,000 - 2,499	2.71	3.18	+ .47
2,500 - 4,999	2.46	2.96	+ .50
5,000 - 9,999	2.74	2.78	+ .04
10,000 - 19,999	3.07	3.12	+ .05
20,000 Plus	1.99	1.79	- .20
Public	2.74	2.91	+ .17
Below 200	3.29	5.85	+2.56
200-499	3.02	4.19	+1.17
500-999	3.52	5.07	+1.55
1,000 - 2,499	3.17	4.12	+ .95
2,500 - 4,999			+ .28
5,000 - 9,999	2.27	2.50	+ .23
10,000 - 19,999	2.70	2.52	- .18
20,000 Plus	I[a]	I[a]	
Private	2.92	3.64	+ .72
Below 200	2.67	4.21	+1.54
200-499	2.92	4.17	+1.25
500-999	3.29	3.53	+ .24
1,000 - 2,499	2.98	3.68	+ .70
2,500 - 4,999	2.51	2.94	+ .43
5,000 - 9,999	2.64	2.72	+ .08
10,000 - 19,999	3.03	3.05	+ .02
20,000 Plus	1.99	1.79	- .20
All Institutions	2.80	3.13	+ .33

[a] Data incomplete.

Conclusions

The discussion, case studies, and tabular information provided above lead to several conclusions concerning the effect of the Title I grant program of the Act on the utilization of academic facilities.

1. The time lag between the award of a grant to an institution of higher education, the construction of the facility and the occupation of the building by faculty and students is such that the impact of the utilization is not visible at present.
2. Many existing facilities are being replaced or converted to non-academic uses which lessens the utilization impact of new facilities.
3. Many of the new facilities are special buildings which provide important, needed auxiliary support to the academic function of the campus but do not relieve the shortage of direct instructional space (classrooms and laboratories).
4. The capacity/enrollment ratio is a valid measure of the utilization of the instructional and library space and can be projected to indicate future use.
5. The projected utilization favors the small, private undergraduate institution as compared to the large, public university with large graduate programs.
6. All OE regions project a higher utilization ratio when the facilities are occupied and in use. The question which remains to be answered in the future is whether or not the construction will continue to provide academic space to keep up the pace of rising enrollments.

VI

THE EFFECT OF THE HIGHER EDUCATION FACILITIES ACT ON THE ACADEMIC PROGRAM OF INSTITUTIONS OF HIGHER EDUCATION

Introduction

The purpose of this Section is to examine the effect that the Act had on the scope and the quality of academic programs in these institutions receiving grants and loans. Two sources were used in securing the necessary data. These were the telephone interviews with college representatives and the face-to-face interviews with nine of the state commissions. Illustrative examples were sought for the statement made.

Some of the replies received did not directly apply to the scope and quality of the program but to factors related to their improvement.

Analysis of Reports

Institutional Reports

The following are abbreviated comments taken directly from the institutional reports. The question asked was, "Have the funds had any noticeable effect, directly or indirectly on the educational program?"

Of the forty-three institutions interviewed, four replied that it was difficult to evaluate the effects until the building was completed. The other thirty-nine responses shown below, paraphrase individual responses from separate institutions:

Comments

- One new science building made possible more and better programs in science.
- We replaced a hopeless library - improved program.
- New facilities for science and agriculture improved quality of instructional program.
- New biology laboratory--now can give better instruction.

- With new facilities have been able to add Master in Arts and Master in Science degree programs.
- Now have approved engineering technology programs.
- Moved from temporary to permanent facility. Scope and quality of program improved greatly.
- Scope has not improved but quality has. Quality space has aided in attracting higher quality staff.
- Improved and expanded life sciences as result of new construction.
- Curriculum basically the same; quality of program and instruction improved greatly by improved library, better labs.
- Instructional efficiency improved, especially by offerings in microbiology and micro-chemistry now possible.
- Entire campus updated.
- More audio-visual instruction and language laboratories now possible.
- Better facilities aids in attracting more quality faculty, quality of program and improved curriculum aided in accreditation.
- Quality of program improved in six departments going into new buildings.
- Expanded offerings in chemistry, biology, and physics. Can now offer a sequential program.
- Undecided as yet. We just moved into new buildings.
- Very definite improvement in quality.
- Great improvement in quality of science program.
- Library was totally inadequate--great handicap to quality instruction--now greatly improved.
- Helped to expand offerings over what was previously possible.
- Shared library with high school for forty years--now have own library, also improved program in biology, botany and nursing.
- Difficult to tell how much. Library space will certainly improve quality of existing program.
- Improved labs, closed circuit T. V. in humanities, quality of building helped obtain accreditation.
- Program greatly improved.
- Expanded offerings.
- Added astronomy, geology, microbiology, computer technology and experimental psychology. Great

improvement.

- Greatly improved instruction--greater use of library now possible.
- Instead of curtailing program and enrollment, we are now able to expand in quality and number.
- More audio-visual work now possible, use of seminars increased, improved instructional methods.
- Have added language labs.
- Considerable improvement in Science Program.
- Increase of students in science.
- Qualitative effective greatest in library. No longer have to keep 500,000 volumes in boxes.
- Will not now have to curtail program in science.
- Will have great effect on improvement of library.
- Great program expansion.
- Built first building without federal aid. Hope to get library built earlier than expected with federal funds.
- Increased enrollments by increasing library space.
- The addition of the computer center broadened programs.

State Commission Interviews

The question was asked, "Did the Higher Education Facilities Act have any significant effect on the scope and/or quality of the programs offered in colleges in your state? Illustrate, if possible." The results are summarized in Table 6.1.

TABLE 6.1

THE EFFECT OF THE HIGHER EDUCATION FACILITIES ACT ON SCOPE AND QUALITY OF PROGRAMS IN COLLEGES IN THE STATE

State	Scope	Quality	Illustrative Example
Arkansas	Course offerings expanded especially in junior colleges	Quality greatly improved, especially at the state college of Arkansas and Arkansas State University	Expanded scope in Philips County and West Ark. Junior College and State College of Ark. improved quality in science and fine arts.

(To be continued)

TABLE 6.1 (Continued)

THE EFFECT OF THE HIGHER EDUCATION FACILITIES ACT ON SCOPE AND QUALITY OF PROGRAMS IN COLLEGES IN THE STATE

State	Scope	Quality	Illustrative Example
California	Private colleges Yes. Not appreciably, State sets standards for all public institutions which constitutes approximately 90 per cent of the total	Private colleges, Yes. Not appreciably, State sets standards for all public institutions which constitutes 90 per cent of total.	Private colleges would have had to cut enrollment or the quality of programs.
Colorado	Doubtful	Yes, required more state planning and standards	University of Denver would have had to cut enrollment of quality of programs
Florida	Increased in several cases	Increased	FSU science program improved, Tallahassee Junior College
Maryland	Increased	Quality improved especially in private colleges	Broadening of program in community colleges and Univ. of Maryland
Massachusetts	Many new programs initiated	Invariably increased quality	Private colleges and new community colleges
Minnesota	Increased especially in private colleges	Yes,especially in private colleges	Bethany Lutheran, St. Scholastica and St. Olafs are all examples of great changes in scope and quality, although not all institutions are equal in status.
New York	Increased in new community colleges. Particularly advantageous to small private colleges	Greatly improved. Greatly improved, will relieve leased and sub-standard space	Expansions of community college system. New York City Community College of Applied Arts and Sciences, Hartwick College.

(To be continued)

TABLE 6.1 (Continued)

THE EFFECT OF THE HIGHER EDUCATION FACILITIES ACT ON SCOPE AND QUALITY OF PROGRAMS IN COLLEGES IN THE STATE

State	Scope	Quality	Illustrative Example
Ohio	Expansion of State University System aided in broadening scope. Private institutions were aided.	Quality improved greatly. Small private colleges improved.	Cuyahoga Community College, Cleveland University, University of Akron, Miami University, Ohio University, Baldwin-Wallace

Conclusions

The foregoing responses indicate that there was a general concensus that the Higher Education Facilities Act fund greatly improved the quality and scope of programs.

It appears that, in general, community colleges and private colleges had the greatest improvement in the scope and quality of the programs. In many cases, the community colleges had received little state assistance either in financing or in planning of facilities. The Act encouraged both. In attempting to accommodate additional students, many private colleges decreased the scope and quality of their programs by neglect of maintenance and rehabilitation and failing to provide needed new construction. Before the Act, the only two alternatives appeared to be reducing enrollments or transferring operational funds into capital expenditures. The Act assisted private colleges in avoiding both these unsatisfactory alternatives. The scope and quality of programs in private institutions were improved and increasing enrollments have been accommodated.

VII

THE IMPACT OF THE FACILITIES PROGRAM ON UNDERGRADUATE TUITION CHARGES IN INSTITUTIONS OF HIGHER LEARNING

Introduction

The purpose of this Section is to evaluate the impact of the Act on tuition rates for the years 1964 and 1966 for the institutions receiving federal grants under Title I of the Higher Education Facilities Act.

Assumptions and Hypotheses

Conferences with state authorities, examination of college catalogues, and discussions with college administrators give evidence of a general increase in undergraduate tuition and fees. These increases are caused by substantial increases in costs for the operation of colleges and especially the instructional costs which amount to over 60 per cent of the total operating costs.

It is recognized that the income from student tuition and fees generally goes directly into the operation budget. In rare instances, a small part of these receipts has been allotted to capital construction budgets.

Several hypotheses were examined in this section including:

1. As the ratio of grants to toal cost increased, there was a reduction of the tuition increases.
2. As the ratio of grants to total cost increased, the tuition increases accelerated.
3. There was no relationship between the ratio and tuition and fee increases.

Analysis of Data

Table 7.1 shows the undergraduate tuition and fees for the years 1964 and 1966 for institutions receiving Title I

TABLE 7.1

CHANGES IN STANDARD UNDERGRADUATE TUITION AND FEES AND THE RATIO OF FEDERAL GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963 TO THE SUM OF THE ANNUAL FACILITIES COSTS FOR THE FISCAL YEARS 1965 AND 1966

Type of Institution	No.	Undergraduate Tuition & Fees		Ratio	Grants Title I	Cost of Facilities Sum 65 + 66	Ratio of Grants/Sum Cost of Facilities
		66	64	66/64	65 + 66	Fiscal Years	
University	26	$ 8,665	$ 7,364	1.18	$ 31,746,834	$152,616,347	.21
Liberal Arts	51	12,221	10,331	1.18	44,673,963	180,410,467	.25
Fine Arts	0	0	0	I	0	0	I
Teachers Col.	87	21,821	18,970	1.15	51,632,582	187,851,121	.27
Independent T.	6	1,501	1,056	1.42	3,658,750	16,817,228	.22
Theological[a]	0	0	0	I	0	0	I
Other Indep. Professional	1	400	350	1.14	201,542	1,781,144	.11
Junior Col.	78	16,971	14,456	1.17	34,872,051	137,160,659	.25
Technical Institute	3	865	845	1.02	2,089,042	14,951,347	.14
Semiprof. Sch.	0	0	0	I	0	0	I
Public	252	62,444	53,372	1.17	168,874,764	691,588,413	.24
University	15	19,435	16,827	1.15	10,398,306	60,044,731	.17
Liberal Arts	161	165,405	141,262	1.17	71,738,100	268,358,354	.27
Fine Arts	0	0	0	I	0	0	I
Teachers Col.	91	3,350	2,890	1.16	1,382,577	8,073,880	.17
Independent T.	6	6,075	5,475	1.11	6,193,797	19,630,514	.32
Theological[a]	4	2,634	2,399	1.10	1,442,484	5,017,618	.29
Other Indep. Professional	6	6,334	5,545	1.14	2,922,228	22,867,759	.13
Technical Inst.	0	0	0	I	0	0	I
Junior College	24	18,336	15,877	1.15	9,241,807	32,193,677	.29
Semiprof. Sch.	3	2,575	2,295	1.12	2,070,194	7,785,062	.27
Private	223	$ 224,144	$192,570	1.16	$105,389,493	$423,971,595	.25

(To be continued on next page)

TABLE 7.1 (Continued)

CHANGES IN STANDARD UNDERGRADUATE TUITION AND FEES AND THE RATIO OF FEDERAL GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963 TO THE SUM OF THE ANNUAL FACILITIES COSTS FOR THE FISCAL YEARS 1965 AND 1966

Type of Institution	No.	Undergraduate Tuition and Fees		Ratio	Grants Title I	Cost of Facilities Sum 65 + 66 Fiscal Years	Ratio of Grants/Sum Cost of Facilities
		66	64	66/64	65 + 66		
University	41	$ 28,100	$ 24,191	1.16	$ 42,145,140	$212,661,078	.20
Liberal Arts	212	177,626	151,593	1.17	116,412,063	448,768,821	.26
Fine Arts	0	0	0	I	0	0	I
Teachers College	91	25,171	21,860	1.15	53,015,159	195,925,001	.27
Independent Tech.	12	7,576	6,531	1.16	9,852,547	36,447,742	.27
Theological [a]	4	2,634	2,399	1.10	1,442,484	5,017,618	.29
Other Independent Prof.	7	6,734	5,895	1.14	3,123,770	24,648,903	.13
Junior College	102	35,307	30,333	1.16	44,113,858	169,354,436	.26
Technical Institute	3	865	845	1.02	2,089,042	14,951,347	.14
Semiprof. School	3	2,575	2,295	1.12	2,070,194	7,785,062	.27
All	475 [b]	$286,588	$245,942	1.17	$274,264,257	$1,115,560,008	.25

[a] Funds distributed represent aid to undergraduate liberal arts components of the institution's program.

[b] Includes Institutions that received Title I funds only.

funds and the ratio of these grants to the total cost of the facilities constructed. There were a total of 475 institutions included, of which 252 were public and 223 were private. Each type of institution showed some increase in undergraduate tuition and fees during this two-year period. The range in the increase was from 2 per cent in the three public technical institutes to 32 per cent in the six public technical colleges. The average for public, private, and total was 17 per cent. The relative uniformity is shown in Table 7.2

TABLE 7.2

PERCENTAGE INCREASE IN TUITION 1964-66 FOR PUBLIC AND PRIVATE INSTITUTIONS

Percentage Increase	Public Institutions Types	Public Institutions Number	Private Types	Institution Number
Over 20	1	6	0	0
15 - 19	4	242	4	204
10 - 14	1	1	4	19
Under 10	1	3	0	0
Total	7	252	8	223

The ratio of the Title I grants to the total cost of the buildings varied considerably, although the average for public institutions was 24 per cent, private institutions 25 per cent and the overall average 25 per cent.

The range for public institutions was from a low of 11 per cent for "other independent professional" to a high of 27 per cent for "teachers college." For private institutions, the low was 13 per cent for "other independent professional;" the high was 32 per cent for "independent technical."

In Table 7.3 the tuition and fee changes between 1964 and 1966 and the ratio of the grant to the total cost of the facility are shown by size of institution. It will be noted that

TABLE 7.3

CHANGES IN STANDARD UNDERGRADUATE TUITION AND FEES AND THE RATIO OF FEDERAL GRANTS UNDER TITLE I OF THE HIGHER EDUCATION FACILITIES ACT OF 1963 TO THE SUM OF THE COST OF FACILITIES FOR THE FISCAL YEARS 1965 AND 1966...BY SIZE OF INSTITUTION

Type of Institution	No.	Undergraduate Tuition and Fees			Grants Title I 65 + 66	Cost of Facilities Sum 65 + 66 Fiscal Years	Ratio Grants/Sum Cost of Facilities
		66	64	Ratio 66/64			
Below 200	2	$ 780	$ 740	1.05	$ 312,531	$ 1,816,306	.17
200 - 499	53	26,226	23,127	1.13	13,525,710	50,052,883	.27
500 - 999	112	80,594	69,025	1.17	45,296,850	156,417,764	.29
1,000 - 2,499	161	113,498	96,859	1.17	78,966,166	302,661,761	.26
2,500 - 4,999	81	35,333	30,417	1.16	65,198,089	267,504,803	.24
5,000 - 9,999	47	22,618	19,172	1.18	47,864,301	200,578,918	.24
10,000 - 19,999	18	7,193	6,296	1.14	22,100,610	128,944,570	.17
20,000 Plus	1	346	306	1.13	1,000,000	7,583,003	.13
Total	475[a]	$286,588	$245,942	1.17	$274,264,257	$1,115,560,008	.25

[a] Includes Institutions that received Title I funds only.

TABLE 7.4

MATRIX ANALYSIS BY NUMBER OF INSTITUTIONS AND BY PERCENT OF INSTITUTIONS OF THE RATIO OF FEDERAL TITLE I GRANTS TO THE SUM OF FACILITIES COST IN 1965 AND 1966 AND THE PERCENTAGE OF UNDERGRADUATE TUITION AND FEE INCREASE 1964 TO 1966

Vertical Axis Represents Percentage of Tuition-Fee Increase

Percent Tuition-Fee Increase	0 - 9.9		10.0 - 19.9			20.0 - 29.9		30.0 - Plus		Total
60.0 - or more	1	.14	7	1.01	14	2.03	26	3.77	48	6.96
50.0 - 59.9	1	.14	1	.14	3	.43	11	1.59	16	2.32
40.0 - 49.9	0	.0	4	.58	1	.14	16	2.32	21	3.04
30.0 - 39.9	1	.14	8	1.16	12	1.74	29	4.20	50	7.25
20.0 - 29.9	6	.87	15	2.17	25	3.62	55	7.97	101	14.64
10.0 - 19.9	16	2.32	35	5.07	51	7.39	105	15.22	207	30.00
0 - 9.9	17	2.46	42	6.09	46	6.67	98	14.20	203	29.42
Reduction	1	.14	6	.87	11	1.59	26	3.77	44	6.38
Total	43	6.23	118	17.10	163	23.62	366	53.04	690	100.00

Note: Horizontal Axis Represents the Percentage of Facilities Costs Accounted for by Grants Under Title I in Each Institution.

institutions in each of the enrollment categories between 500 to 10,000 had fee increases between 16 per cent and 18 per cent. Those under 500 and over 10,000 had smaller increases ranging from 5 per cent to 14 per cent. For the 475 institutions, the average was 17 per cent.

In a somewhat similar grouping, the ratios of grants to total costs showed a range of 24 to 29 per cent for all categories from over 200 enrollment to 10,000 with the under 200 and over 10,000 enrollment categories having relatively smaller percentages ranging from 13 to 17. The average was 25 per cent.

From the above, it is evident that institution size had little effect upon either the increase in tuition or the ratio of grant to total cost. The extremely small and extremely large institutions provided some exceptions to this but the number of institutions in each of these categories was too small to appreciably affect this general statement.

Table 7.4 provides a further evaluation of the number and percentage of institutions in various categories, regarding tuition increases as well as ratios of the federal grant to the total cost of the facility. The scope and magnitude of tuition and fee increases for the two-year period can be seen from the following text table derived from Table 7.4

TABLE 7.5

PERCENTAGE OF INSTITUTIONS WITH VARYING PERCENTAGE INCREASES IN TUITION

Percentage Increase	Cumulative Percentage of Institutions	Cumulative Number
60 or more	6.96	48
50 or more	9.28	64
40 or more	12.32	85
30 or more	19.57	135
20 or more	34.21	236
10 or more	64.21	443
Increase	93.63	646
Reduction	6.38	44
Total	100.00	690

The number of institutions with an above 60 per cent increase in tuition and fees slightly exceeds those with decreased charges (48 to 44). Over 1/3 (34.21 per cent) have a 20 per cent or higher increase in tuition and fees. It can be seen from the Table 7.4 that there is no clear predominance of figures extending from upper left of the table to the lower right or from the lower left to the upper right. Rather the main concentration is in the 20 - 30 plus categories of ratio and the 10 - 20 per cent increase in tuition. This gives no clear picture of a relationship between ratio and increases in tuition.

Tables 7.1, 7.2, and 7.3 include institutions that received Title I funds only. Tables 7.4, 7.6 and 7.7 were less restrictive.

In Tables 7.6 and 7.7 the same items are considered as in Table 7.4 except that Table 7.6 deals with junior colleges and technical institutes only. Table 7.7 deals with all other institutions, and Table 7.4 provides totals. The cumulative figures for tuition and fee increases, taken from these three tables are given in Table 7.8

Data in Tables 7.4, 7.6, and 7.7 indicate no clear relationship between the ratio of the federal grant and total cost on one hand and the tuition increase on the other.

Conclusions

The most important conclusion to be reached from the data presented in this Section is that there is no relationship between the ratio of grant to total cost and the tuition increase. On the basis of knowledge of the administration of colleges, the following possible explanations are offered.

1. Except in rare instances, funds from the operational budget are seldom transferred to the capital budget.
2. In a time of increasing salaries and other operational costs such a transfer would be extremely unlikely. Other sections of the report show the opinions of state agencies and individual colleges on the dangers of such a transfer.

TABLE 7.6

MATRIX ANALYSIS BY NUMBER OF INSTITUTIONS AND BY PER CENT OF INSTITUTIONS OF THE RATIO OF FEDERAL TITLE I GRANTS TO THE SUM OF FACILITIES COSTS IN 1965 AND 1966 AND THE PERCENTAGE OF UNDERGRADUATE TUITION AND FEE INCREASE 1964 TO 1966 FOR JUNIOR COLLEGES AND TECHNICAL INSTITUTES ONLY

	Vertical Axis Represents Percentage of Tuition-Fee Increase									
Percent Tuition-Fee Increase	0 - 9.9		10.0 - 19.9		20.0 - 29.9		30.0 - Plus		Total	
60.0 or more	1	.85	1	.85	4	3.39	7	5.93	13	11.02
50.0 - 59.9	0	0	0	0	1	.85	6	5.08	7	5.93
40.0 - 49.9	0	0	0	0	0	0	4	3.39	4	3.39
30.0 - 39.9	0	0	0	0	0	0	7	5.93	7	5.93
20.0 - 29.9	0	0	2	1.69	1	.85	12	10.17	15	12.71
10.0 - 19.9	1	.85	1	.85	3	2.54	21	17.80	26	22.03
0 - 9.9	3	2.54	6	5.08	2	1.69	22	18.64	33	27.97
Reduction	0	0	3	2.54	4	3.39	6	5.08	13	11.02
Total	5	4.24	13	11.02	15	12.71	85	72.03	118	100.00

Note: Horizontal Axis Represents the Percentage of Facilities Costs Accounted for by Grants Under Title I in each Institution.

TABLE 7.7

MATRIX ANALYSIS BY NUMBER OF INSTITUTIONS AND BY PER CENT OF INSTITUTIONS OF THE RATIO OF FEDERAL TITLE I GRANTS TO THE SUM OF FACILITIES COSTS IN 1965 AND 1966 AND THE PERCENTAGE OF UNDERGRADUATE TUITION AND FEE INCREASE 1964 TO 1966 FOR ALL INSTITUTIONS OTHER THAN JUNIOR COLLEGES AND TECHNICAL INSTITUTES

Vertical Axis Represents Percentage of Tuition-Fee Increase

Percent Tuition-Fee Increase	0 - 9.9		10.0 - 19.9		20.0 - 29.9		30.0 - Plus		Total	
60 or more	0	0	6	1.05	10	1.75	19	3.32	35	6.12
50.0 - 59.9	1	.17	1	.17	2	.35	5	.87	9	1.57
40.0 - 49.9	0	0	4	.70	1	.17	12	2.10	17	2.97
30.0 - 39.9	1	.17	8	1.40	12	2.10	22	3.85	43	7.52
20.0 - 29.9	6	1.05	13	2.72	24	4.20	43	7.52	86	15.03
10.0 - 19.9	15	2.62	34	5.94	48	8.39	84	14.69	181	31.64
0 - 9.9	14	2.45	36	6.29	44	7.69	76	13.29	170	29.72
Reduction	1	.17	3	.52	7	1.22	20	3.50	31	5.42
Total	38	6.64	105	18.36	148	25.87	281	49.13	572	100.00

Note: Horizontal Axis Represents the Percentage of Facilities Costs Accounted for by Grants Under Title I in Each Institution.

TABLE 7.8

CUMULATIVE INCREASES IN TUITION AND FEES

Percentage Increase in Tuition	Junior Colleges		All Other		Total	
	No.	Percent	No.	Percent	No.	Percent
60 or more	13	11	35	6	48	7
50 or more	20	17	44	8	64	9
40 or more	24	20	61	11	85	12
30 or more	31	26	104	18	135	19
20 or more	46	39	190	33	237	34
10 or more	72	61	371	65	443	64
Increase	105	89	541	95	646	94
Decrease	13	11	31	5	44	6
Total	118	100	572	100	690	100

3. Increases in local and state operational funds have generally not kept up with the increases in operational budgets of the colleges in the United States.
4. In many cases private colleges have postponed construction and rehabilitation for many years because funds could not be secured for both current operation and buildings. It was felt that a radical increase in tuition would lower enrollments and accentuate the problem.

Perhaps further study should be made to compare tuition and fees charged students by institutions participating in the College Facilities program with non-participating institutions.

VIII

REACTIONS OF PARTICIPATING INSTITUTIONS TO THE COLLEGE FACILITIES PROGRAM

Introduction

This section of the Report reviews the findings of the Study relative to the reaction of participating institutions toward the College Facilities Program. The source of information used to evaluate this reaction is the series of telephone interviews conducted with representatives of a random sample of institutions selected by computer. The procedure used in the selection of the sample of institutions is elaborated in Chapter I and is not repeated here.

Representatives of forty-three institutions were interviewed by telephone. The interviewees were asked, among others, five questions which were intended to elicit their general views toward the College Facilities Program. These questions were as follows:

1. Is this an effective program?
2. Should this program be expanded? curtailed? left unchanged? abolished?
3. What are the strong points of the program?
4. What are the weak points of the program?
5. What changes should be made in the program?

Effectiveness of the Program

Representatives of all 43 institutions responded to the question regarding the effectiveness of the program. All unanimously agreed that the College Facilities Program was an effective one. A single comment is used to summarize an elaboration of most of the individual institution's responses. These comments are as follows:

- One of the best of the federal programs
- An indispensable program
- A very effective program
- Yes, provides more dollars where serious shortages have existed
- A wonderful program
- Helpful in taking care of more students
- Yes, most helpful
- Definitely, an effective program
- A lifesaver to New Mexico
- Has been very helpful
- General purpose concept is exceptionally good
- The most reasonable program
- Very effective
- A very desirable program
- Program has stimulated giving
- In general, beneficial in the long run
- Most optimistic about the program
- Program is needed
- The grant portion is effective
- A necessary program--fills a need
- Both needed and timely
- A well-managed program
- A relatively simple program--the problem is moving fast enough
- Certainly effective--but not enough matching money
- Happy with the results
- Undoubtedly effective
- Yes, could not have moved ahead had federal funds not been available
- Has given a real boost to program
- Have very positive view with regard to all of this program
- Available funds provide incentive to the enlargement of own horizons--can think on a larger scale as to how to solve problems.
- A marvelous job has been done

The Future of the Program

Responses to the question relative to whether the program should be expanded, curtailed, unchanged or abolished revealed the following:

1. Twenty-six favored expanding the program while five indicated that no expansion was needed.
2. Twelve indicated more funds were needed.
3. Not one of the 43 indicated that the program should be curtailed. Eighteen responded with a positive NO.
4. Sixteen indicated that the program should be left unchanged while twelve indicated that some changes were needed.
5. Not one of the respondents indicated that the program should be abolished.

Strengths and Weaknesses of the Program

Strengths

The interviewees called attention to program characteristics which they considered to be strong points. The strengths are indicated in the following comments:

- Has enabled the development of institutions.
- Enables the more rapid development of facilities to meet essential needs of universities.
- The mere fact that funds have been made available and that it is possible to obtain them.
- Provides incentive to raise needed funds.
- Provides money to take care of more students.
- The fact that the program is available encourages expansion.
- Most cooperative attitude on the part of the Office of Education.
- A well-administered program.
- Encourages giving by donors.
- Encourages matching and enables the funding of needed projects.
- Working through State Departments of Education has provided benefits in consulting service.

- Provides an opportunity to improve offerings.
- Stimulates giving to private institutions.
- Improves plant so that better students and faculty are attracted.
- Provides more initiative on the part of local planners and has changed the attitudes regarding educational needs in the State.
- Approves of the decentralization and the fact-to-face consultation provided.
- Control remains with the State.
- Makes institutions' money go farther.
- Matching feature is a stimulus.
- Administration is excellent and cooperative.
- Provides money where the need is.
- Assisted in improving the quality of institutions' program.
- Caused facility development to come sooner.
- Grant portion most effective.
- Funds have made possible the expansion of private institutions and has allowed them to continue to exist.
- Matching feature is a strong incentive to private sources to give funds.
- Program is coordinated with state planning and is not operating outside of it.
- Without the aid couldn't possibly cope with the tremendous junior college population expansion and its problems.
- State control and the use of a state plan.
- Enable institutions to get long scheduled and needed projects underway.
- Less red tape than most programs.
- Program is structured so that any institution can qualify on the basis of need.
- Use of state plan is excellent.
- Developed a plant which might not have been possible otherwise.
- A continued stimulus to development.
- Loan interest rates are satisfactory.
- Not a giveaway--stimulates college planning and fund raising.
- Requires institutional planning.

- Loans are at low interest rates and provide for a long amortization period.
- Funds appear to be adequate.
- State Commission relationships are good.
- Made possible the expansion of colleges that otherwise could not have afforded facilities.

Weaknesses

Interviewees also stated what they considered to be the major weaknesses of the program; although 16 per cent indicated no weaknesses. The following statements summarize the comments made:

- Too much red tape in filing applications and obtaining approvals. Ten institutions mentioned this item.
- Too much unnecessary paperwork in filing applications was mentioned by ten institutions.
- Four institutions referred to the impairment of the institutions' program caused by the time lag in submitting applications and completing construction. Six others referred to delayed approvals and four others to the time required to complete applications.
- Poor administration of the program was mentioned by two of the 43 institutions.
- Two institutions representing two different states commented on the apparent cutback of state funds as a result of federal support of the program.
- Two institutions referred to conflicts in state and federal requirements.

Other weaknesses mentioned at least once include:

- State commissions offer little assistance--not doing much except going through the motions of receiving and forwarding applications.
- Delay in approval of grants causes complications in bidding projects.
- Inability of those who do not have, to receive that which they really need.
- Instructions for completion of applications, etc. needs simplification.
- Loan charges are too high and do not meet the needs of private colleges.
- Changes in personnel.
- Continuous change in application forms.

- Lead time needed to get into construction.
- Could encourage some colleges to expand beyond all reason.
- Takes too long to process plans, specifications and bids to award contracts.
- Limitations on the amount of funds for private institutions.
- Changes in procedures and requirements cause delay and inconvenience.

Changes Needed in the Program

Representatives of each institution responded to the question regarding changes needed in the program. The comments and suggestions are summarized in the following statements:

- Two institutions suggested a reduction in the red tape involved in the program.
- A reduction in paperwork was suggested by three institutions.
- Two institutions suggested the need for expediting architectural plan approvals; another suggested that the time be reduced between submission of applications and the grant approval notice and five others stated there was a need to expedite and approve overall procedures.
- Increased appropriations were seen as needed by five institutions while ten others suggested an increase in the federal share of the matching sections of the Act.
- Two institutions suggested that smaller institutions should be helped more.
- Improved coordination between federal and state programs were suggested by two institutions.
- Maintenance of effort by states was suggested as a needed requirement by one institution.
- One institution suggested that the need and ability of institutions to pay should be considered in awarding grants.
- Two institutions suggested the total administration of the program should be handled by federal agencies.
- Two institutions stated that they approved of the decentralization of the federal staff and functions and that this should be continued.

Summary and Conclusions

Summary

Reactions of representatives interviewed from the institutions in the sample are summarized by giving general answers to the questions posed to the group.

First, is the college facilities program an effective one? The great majority reacted positively to this question indicating that in their opinion it definitely is an effective program. As a matter of fact, there were no responses to the contrary.

Second, should this program be expanded? curtailed? left unchanged? abolished? Reactions were favorable with the majority indicating that expansion of the program would be desirable. Not one respondent indicated that the program should be curtailed or abolished.

Third, what are the strong points of the program? The general reaction of interviewees indicated that the program has numerous strong points. Respondents from private institutions pointed out repeatedly that both the grants and the loans have served as a stimulus to their own fund raising programs. As a result of the program, private institutions have been able to expand their facilities; whereas otherwise, it is doubtful that expansion would have been possible for many.

Respondents from the public institutions indicated that the construction of needed facilities has come about sooner than would have otherwise been possible; consequently, they are able to take care of more students now. Furthermore, the program has stimulated better planning of facilities; as well as providing opportunities for improvement of programs and for expanding offerings.

Fourth, what are the weak points of the program? The major weaknesses indicated by interviewees had to do with the red tape, the paperwork and the time involved in the processing of applications for grants and the approval of architectural plans and specifications for construction. Other weak points were mentioned only once or twice and appeared to be isolated problems peculiar to a state or institution.

Last, what changes should be made in the program? The changes suggested follow somewhat the pattern of responses re-

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garding the weak points in the program. Suggestions were made to reduce the red tape and the paperwork and to expedite approval procedures for applications and architectural plans and specifications. Other major suggestions were to increase federal appropriations for the program and to increase the federal share of the matching funds.

Conclusion

In conclusion, it is amply clear that the persons from the sample of institutions interviewed reacted favorably to the program. The investigators were impressed by the obvious lack of criticism of the program and similarly impressed with the many favorable comments made on behalf of the program.

IX

Summary of Findings and Conclusions

Introduction

The problem in this study has been to evaluate the effectiveness of the Higher Education Facilities Program in accomplishing the major objectives specified in the enacting legislation. In evaluating the effectiveness of the program answers to the following questions have been sought:

1. Is the College Facilities Program reaching its objectives of providing more space to handle increasing enrollments?
2. Is the College Facilities Program supplementing other funds available for the construction of facilities?
3. How are funds under the College Facilities Program being distributed with respect to type and size of institution and by geographical location?
4. What effects, if any, has the facilities program had upon the utilization of academic facilities?
5. Has the facilities program affected the academic programs of participating institutions in any identifiable way?
6. Has the facilities program had any effect upon standard undergraduate tuition and fees of participating institutions?
7. How have participating institutions received the facilities program?

The investigators used data for FY 65 and FY 66 taken from the applications for grants and loans on file in the U. S. Office of Education, data about capital outlay expenditures of institutions for FY 63 and FY 64 taken from the Robbins Study, data on undergraduate tuition and charges taken from the College Facts Chart, opinions and information from telephone interviews with representatives of 43 institutions selected by computer, and comments and suggestions from personal interviews with representatives of nine state commissions arbitrarily selected to represent the nine OE Regions. The quantitative data were keypunched and processed by computer. Computer printouts of data and other pertinent information were then analyzed, conclusions were drawn and the Report was written.

Highlights of Findings

Some of the more significant findings are summarized here in relation to the major questions raised in the study.

Is the College Facilities Program Reaching Its Objectives of Providing More Space to Handle Increasing Enrollments?

The data reveal that approximately 1,000 (986 included in this study) institutions and branch campuses received funds under Title I, II and III. The enrollment increase which is to be accommodated by the additional facilities funded under this program approximates 1.2 million students which amounts to an increase of approximately 45 per cent. The increase in assignable space (instructional and library) amounted to approximately 108 million square feet or 125 per cent. The increase in assignable space (instructional and library) for each one additional FTE student was approximately 88 square feet, and the percentage increase in FTE students for each percentage of increase in assignable space was .36.

It is also significant that of the total enrollment increase, 85 per cent, was in the public institutions and 15 per cent in the private. In the public institutions, the universities accounted for nearly 70 per cent of the increase in assignable space while for the private institutions the liberal arts colleges accounted for more than 50 per cent of the space increase.

Institutions in the Large Standard Metropolitan Statistical Areas experienced an increase in assignable instructional and library space of approximately 144 per cent and a 36 per cent increase in enrollment. Institutions in the Standard Metropolitan Statistical Areas experienced an increase of 124 per cent in assignable space and 45 per cent in enrollment. Institutions outside of the metropolitan areas experienced an increase of 120 per cent in assignable space and a 49 per cent increase in enrollment.

The data show that institutions with an enrollment of less than 200 students before approval of grant applications experienced the greatest increase--the ratio of enrollment after grant to before was 18.74. The smallest increase was in institutions with enrollments of 20,000 or more students. Institutions of 5,000 students or more experienced less increase in enrollment than the average for all institutions. The data reveal that the larger the enrollment prior to the application, the smaller the increase in enrollment after grant approval.

Is the College Facilities Program Supplementing Other Funds Available for the Construction of Facilities?

The approach here has been to establish whether and to what extent federal funds allotted under the Act have affected the amounts of funds available from non-federal sources. To make this determination, a statistical analysis of pertinent data and a compilation of opinions by telephone and personal interview were made.

The statistical analysis involved a study of the comparative efforts among the various types of institutions, their control and geographic areas to finance additional facilities as well as their financial effort to determine whether that effort had increased or decreased following the implementation of the Act. Effort has been estimated by using two measures; the ratio of non-federal contributions to federal, and the ratio of capital expenditures in a period before to expenditures for a comparable period after the implementation of the Act.

The compilation of opinions on the operation of the Act were obtained from 43 institutions by long distance telephone and six institutions and nine state commissions by personal interview. The purposes of these interviews, in part, were to obtain opinions on whether non-federal funds had been supplanted by federal funds.

The analyses of the data revealed that for the nation as a whole the federal contribution to construction projects during FY 65 and FY 66 was 28 per cent of the total cost of participating projects and the non-federal portion, 72 per cent. Among the several states, there are considerable variations in the efforts of participating institutions--the lowest is Puerto Rico with an index of effort of .19 and the highest is Nevada with an index of 1.19. The effort to support construction for public institutions is higher than for the private ones. For all public institutions, the index is 1.06 and for the private, .89. The public effort is 19 per cent greater than the private effort. The result is that more construction is stimulated through public institutions than through private ones.

Effort by size of institution varies from a low of .90 for institutions with 500-999 students to a high of 1.13 in institutions with 20,000 or more students. The general rule appears to be that institutions above 2500 students had an index of effort either equal to or above the average for all sizes fo institutions; while those below 2500 had an index less than the average. In short, the larger the institution, the greater the effort.

The data on capital expenditures for instructional and library facilities by 373 institutions for which data were available show that expenditures were 2.92 times as great during the two-year period of operation under the Act as for a comparable period prior to it. Capital expenditures actually increased for all sizes of institutions for all geographic locations as considered here, and for public and private institutions.

Another factor considered was whether and to what extent there is a relationship between the increases in enrollment during the period of the operation of the Act and the proportionate part of the total cost of capital outlay funds covered by federal funds. The data show that the median ratio of federal contributions for institutions having the lowest percentages of increase in enrollments was 33.84, and those having the highest percentage of increased enrollment, 27.08. For institutions receiving the lowest ratio of federal grants, the median percentage of increase in enrollment was 34.00. For institutions receiving the highest ratio of federal funds, the median percentage of increase in enrollment was 19.21.

The telephone and personal interviews were concerned with three questions relating to whether federal funds were supplanting non-federal funds. Results indicated that institutions would have received less funds from non-federal sources had funds under the Act not been available. Also, the great majority of institutions reported that federal funds were not used to supplant non-federal funds. Additionally, the prevailing opinion is that federal funds available under the Act were used to finance projects that would not have been funded otherwise.

How Are Funds Under the College Program Being Distributed With Respect to Type and Size of Institution and by Geographical Location

Data were analyzed regarding the distribution of funds according to the type, size and geographical location of institutions receiving assistance under the Act. Data were obtained from the application files of the U. S. Office of Education. Of the total funds distributed under the Act, Title I funds amounted to 68.25 per cent; Title II, 14.29 per cent; and Title III, 17.46 per cent. Universities received the largest amount of Title I, II and III funds, 38.38 per cent and liberal arts colleges ranked second with 31.89 per cent. Junior colleges received 14.52 per cent of the total while altogether the two-year institutions including junior colleges, technical institutes and semi-professional schools received 16.2 per cent. Junior colleges received 20 per cent of all Title I funds while all two year institutions including junior colleges received 21.85 per cent of all Title I funds.

The distribution of funds to public and private institutions is of interest. Public institutions received 56.43 per cent of funds distributed to all institutions; 66.14 per cent of all Title I funds; 58.5 per cent of all Title II funds and 16.75 per cent of all Title III funds. On the other hand, private institutions received 33.86 per cent of all Title I funds, 41.5 per cent of all Title II funds and 83.25 per cent of all Title III funds. The Title III funds received by private institutions represented approximately 33 per cent of the total of all Title I, Title II and Title III funds distributed to them.

Also the distribution of funds by geographical location has been determined. Location parameters used in the Study were OE Regions, states, Large Standard Metropolitan Statistical Areas, Standard Metropolitan Statistical Areas and Areas Outside of the metropolitan areas. The distribution of funds ranged from the lowest of 2.24 per cent in Region 8 to the highest of 19.79 per cent in Region 5. Region 2 with 19.09 per cent ranked a close second to Region 5. The data also reveal that 46.16 per cent of the total funds were distributed to cities of 50,000 population or more while the remainder, 53.85 per cent was distributed to institutions outside of the metropolitan areas. The Large Standard Metropolitan Statistical Areas received 22.25 per cent of the funds and the Standard Metropolitan Statistical Areas received 23.91 per cent.

Data regarding funds distributed to the states showed that California institutions received 9.55 per cent of all funds distributed. New York institutions ranked second with 9.5 per cent and Illinois, Texas, and Ohio institutions ranked third, fourth, and fifth among the states with 6.59, 5.20, and 4.77 per cent respectively. These five states received 35.61 per cent of the total funds distributed. It is interesting to note that these same five states had 34.62 per cent of the increases in enrollments. Wyoming, Nevada, Alaska, New Hampshire and Delaware, the five states allocated the least amount of funds among the states, received .79 per cent of the total funds distributed. Enrollment increases in the states receiving the lowest amount of funds were 1.4 per cent of the total increases for all states.

Data on the distribution of Title I and II funds reveal that institutions with an enrollment of less than 5,000 students received 65.52 per cent of the funds. Institutions with 1,000 to 2,499 students received 23.4 per cent of the funds which was the largest share of the total. Institutions with 20,000 or more students received 1.58 per cent which was the smallest share.

Institutions with 5,000 to 20,000 students received 41.62 per cent of the funds distributed to the LSMSA's while institutions ranging in size from 1,000 to 10,000 received 61 per cent of the funds distributed to the SMSA's.

Data that relate the size of institutions at the time of the application for funds to the amount and percentage of Title I and II funds approved for distribution reveal that institutions in the size range from 5,000 to 9,999 enrolled the largest percentage of students but ranked second in the percentage of funds received. Institutions in the 1,000 to 2,499 category received the largest percentage of funds but ranked fourth in the percentage of students enrolled. The smaller institutions enrolling approximately 43 per cent of the students received approximately 66 per cent of the Title I and II funds.

What Effects, If Any, Has the Facilities Program Had Upon the Utilization of Academic Facilities?

The effect of the Act upon the utilization of academic facilities at institutions of higher education receiving grants under Title I has been examined. The analysis has included case studies of states and institutions and data on the capacity/enrollment ratio available from the Title I application forms.

Many institutions have not yet occupied facilities for which funds were granted. This fact makes a study of the impact of the Act on utilization of facilities a more or less hypothetical task.

The most significant measure of the impact of the Act on the utilization of academic facilities available to the investigators was the capacity/enrollment ratio. From this ratio, a reasonable estimate can be made. This ratio is the total amount of instructional and library space divided by the total number of student clock hours taught in the space. The approach has been to compare the enrollment/capacity ratio at the time of application with the projected enrollment/capacity ratio following grant approval.

Data for all institutions show an improvement in the projected enrollment/capacity ratio--a change from 2.80 to 3.13. It is significant that only the university category indicates a lower projected capacity/enrollment ratio. Semi-professional schools show the greatest increase, more than doubling the existing space.

Data for all Regions show an increase in the projected ratio. Data for the states, on the other hand, show a great variation in the results. Of the three states with ratios of 4 or better before grant approval, two have a projected decrease in the ratio and one an increase to more than 5. Nine states with enrollment/capacity ratios between 3.00 and 4.00 show increases from 4.07 to a high of 7.39. The causes of these increases and the net effect on the institutions need further analysis in that the reasons are not clearly indicated from the data available in this Study. Of the total states and territories included in the study, 46 showed increases and six decreases in the projected capacity/enrollment ratio.

Data regarding public and private institutions show that private institutions had a larger increase in the capacity/enrollment ratio than the public. For private institutions, the projected increase is .72 and for public,.17.

The projected enrollment/capacity ratios for institutions of various sizes show a projected increase for all groups except those with 20,000 or more students. The largest increase occurs in the institutions with less than 500 students.

Has the Facilities Program Affected the Academic Programs of Participating Institutions in Any Identifiable Way?

The effects that the Act has had on the scope and the quality of academic programs was examined by telephone interview with representatives of a random sample of 43 institutions and face-to-face interviews with representatives from nine state commissions. Facts, opinions and illustrative examples were sought to assist with the evaluation.

Thirty-nine of the forty-three institutions interviewed indicated that either the scope or the quality had been improved through altered or expanded facilities resulting from assistance in the program. Two institutions indicated that they preferred not to comment until after their buildings had been completed.

Representatives from nine state commissions also indicated that improvement both in scope and quality had occurred in their respective states. Seven of the states indicated improvement in scope and eight provided illustrations indicating improvement in quality. Apparently private colleges experienced the greatest improvement in both scope and quality.

Has the Facilities Program Had Any Effects Upon the Standard Undergraduate Tuition and Fees of Participating Institutions?

The impact of the Act on standard undergraduate tuition and fees of participating institutions has been studied. Data on tuition and fee charges were obtained for 690 participating institutions for analysis.

An effort was made to determine whether or not there was a relationship between the ratio of federal grants to the cost of facilities and any increases that may have occurred in undergraduate tuition and fees. The data revealed that tuition increases ranged from two per cent in technical institutes to 17 per cent in liberal arts colleges. Undergraduate tuition in universities, independent technical schools, and in junior colleges increased 16 per cent.

The data also show that the ratio of Title I grants to the cost of facilities in FY 65 and FY 66 for all institutions was 25 per cent. Of the institutions falling below the 25 per cent ratio, one had an increase in tuition of 16 per cent; another, 14 per cent, and the third, 2 per cent. The lowest grant to cost ratio was for other independent professional schools which had a tuition increase of 14 per cent while the lowest tuition increase occurred in technical institutes which had a grant to cost ratio of 14 per cent. The data reveal no significant relationships even though the ratio of grants to the cost of facilities appeared to be substantial.

Further analysis disclosed that 44 institutions, 6.37 per cent of the total, had a tuition reduction. On the other hand, 48 institutions with an increase in tuition of 60 per cent or more exceeded the number with reduced charges. It appears significant that more than 34 per cent of the institutions had a 20 per cent or larger increase in tuition while 9 per cent had a tuition increase of 50 per cent or more.

How Have Participating Institutions Received the Facilities Program?

One of the objectives of the study was to determine the reactions of participating institutions to the College Facilities Program. Telephone interviews with representatives of the 43 institutions in the sample were conducted to elicit their views concerning this program.

The interviews disclosed that there was general concensus that the program was an effective one. A clear majority indicated that they favored expanding the program. Not one indicated that the program should be curtailed or abolished.

Interviewees also indicated that the program had numerous strong points. Representatives from private institutions indicated that both the grants and the loans have been a stimulus to their own fund raising campaigns, with the result that many facilities have been constructed that would not have been possible otherwise.

Persons representing public institutions indicated that the construction of needed facilities had come sooner than could have been possible otherwise. Also, the program has encouraged better planning and provided opportunities for expanded offerings and improvement in the quality of programs.

Weaknesses referred to by the interviewees consisted largely of criticisms of red tape involved, excessive paper work required, and the amount of time needed for the processing of applications for grants and the approval of architectural plans and specifications for construction.

Conclusions

From the analysis of available data and pertinent information, the following conclusions are indicated:

1. The College Facilities program has contributed significantly to the ability of higher

education institutions to accommodate increasing enrollments by providing for a 125 per cent increase in instructional and library space to house an additional 1.2 million students. However, the distribution of the increase in assignable space is not directly proportional to the increases in enrollment by type of institutional control. Private institutions, for example, received 24 per cent of the assignable area increase, but had only 15 per cent of the increase in enrollments. Junior colleges had an increase in enrollment of 13 per cent but an increase of only 10.7 per cent in assignable area.

2. Federal funds, without question, have supplemented monies from non-federal sources to increase the availability of physical facilities. This conclusion is substantiated clearly by the measures used to estimate the maintenance of effort among the states, the types of institutions and their control. It has been further verified by telephone and personal interviews with representatives of a selected sample of institutions and state commissions. While there is considerable variation among the states, the reasons for the variations are not obvious from the data and require further investigation to obtain a satisfactory explanation. Furthermore, because there are significant variations among the states, guidelines could well be needed to provide continuously for the maintenance of effort on the part of states and institutions.
3. With regard to the distribution of funds, public institutions have benefited most from Titles I and II while private institutions have benefited more signnificantly from Title III funds. Universities and liberal arts colleges, having received 70 per cent of the total funds, were the main benefactors of the program. Two year institutions have benefited to the extent anticipated in the Act. Smaller institutions, while enrolling a smaller percentage of the students, have received a greater percentage of the funds than the larger institutions. Institutions located in the metropolitan areas have benefited only to a slightly less extent than the institutions located outside of the metropolitan areas.

4. Because of the fact that facilities funded under the Act have not yet been occupied, a study of the impact of the program on the utilization of academic facilities supported by it is thought to be premature. However, data analyzed concerning the projected change in the capacity/enrollment ratio has provided some estimate of the probable impact on facility utilization. The data clearly reveal an increase in the capacity/enrollment ratio for all institutions while the only type of institutions with a reduction in the ratio was the university group. According to these data, the private institutions benefited most from the increase in the capacity/enrollment ratio.
5. The facilities program has had a favorable impact on the academic programs of participating institutions. The overwhelming majority of opinions received by the investigators indicate that improvements in both the scope and quality of academic programs have been experienced in most institutions. The study strongly supports the conclusion that private institituons have benefited even to a greater extent than public institutions.
6. Data regarding the impact of the program on undergraduate tuition and fees in participating institutions reveal no significant relationships. Tuition and fees have increased for the great majority of institutions included in this study.
7. Participating institutions generally have reacted most favorably to the facilities program. According to the respondents, the facilities program has stimulated fund raising, met growing needs for facilities earlier than could have been possible otherwise, encouraged better planning of facilities and promoted program improvements. Changes appear to be needed, however, in the procedures followed in processing applications for grants and other approval documents by reducing red tape, the amount of paper work required, and the time necessary to obtain

needed approvals.

Finally, it can be concluded unequivocably that the College Facilities Program has greatly enhanced the higher education program of the nation.

GLOSSARY

GLOSSARY

Terms used in this study which also appear in the Office of Education instuctions and application forms for Titles I, II and III of the Higher Education Facilities Act include:

1. FTE - full time equivalent
2. Capacity/enrollment ratio
3. Project
4. Assignable area
5. Clock hour
6. Library and Instructional Space

The definition for the above terms as used in this Study are identical with those defined by the Office of Education.

Terms used in this Study that do not appear in the Office of Education instructions and applications are as follows:

1. Large Standard Metropolitan Statistical Area (LSMSA) - An area that contains a central city of 500,000 or more population. The names of the 55 areas falling in this category are given in Appendix B.
2. Standard Metropolitan Statistical Area (SMSA) - An area that contains a central city of 50,000 and a total population of under 500,000. The names of the 172 areas falling in this category are given in Appendix B.
3. Outside Areas - All those not included in LSMSA or SMSA as defined above.
4. OE Regions - These are Office of Education regions, nine in number. They were designed for the convenience of providing service to the several states. The list of states and outlying areas included in the OE Regions are shown in Appendix A.

5. Index of Effort - In this Study, two measures of effort are used. One measure is calculated as the ratio of the non-federal contribution to the federal contribution. For comparative purposes an index of effort is derived by dividing the individual ratios of non-federal contribution by the national ratio.

   Another measure of effort expresses a comparison of what was accomplished in one period of time as compared to that accomplished in a comparable period of time subsequent to the first. The measure is the ratio of what occurred in the first period to the second. This ratio is converted into an index of effort by dividing the individual ratios by the national ratio.
6. Theological Institutions - The appearance of theological institutions in the listings is caused by the fact that some are partly undergraduate liberal arts colleges and partly theological colleges. The grants made were for the undergraduate liberal arts programs. The Office of Education classifications used in this Study did not distinguish between the two parts of these colleges.

APPENDIX A

APPENDIX A

OE REGIONS AND CONSTITUENT STATES

Region 1

- Connecticut
- Maine
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

Region 2

- Delaware
- New Jersey
- New York
- Pennsylvania

Region 3

- District of Columbia
- Kentucky
- Maryland
- North Carolina
- Puerto Rico
- Virgin Islands
- Virginia
- West Virginia

Region 4

- Alabama
- Florida
- Georgia
- Mississippi
- South Carolina
- Tennessee

Region 5

- Illinois
- Indiana
- Michigan
- Ohio
- Wisconsin

Region 6

- Iowa
- Kansas
- Minnesota
- Missouri
- Nebraska
- North Dakota
- South Dakota

Region 7

- Arkansas
- Louisiana
- New Mexico
- Oklahoma
- Texas

Region 8

- Colorado
- Idaho
- Montana
- Utah
- Wyoming

Region 9

- Alaska
- Arizona
- California
- Guam
- Hawaii
- Nevada
- Oregon
- Washington
- American Samoa

APPENDIX B

APPENDIX B

CITIES INCLUDED IN LARGE STANDARD METROPOLITAN AREAS AND STANDARD METROPOLITAN AREAS

Large Standard Metropolitan Statistical Areas

Akron, Ohio
Albany-Schenectady-Troy, N. Y.
Anaheim-Santa Ana-Garden Grove, Calif.
Atlanta, Ga.
Baltimore, Md.

Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Cincinnati, Ohio-Ky.-Ind.

Cleveland, Ohio
Columbus, Ohio
Dallas, Texas
Dayton, Ohio
Denver, Colo.

Detroit, Mich.
Fort Worth, Texas
Gary-Hammond-East Chicago, Ind.
Hartford, Conn.
Honolulu, Hawaii

Houston, Texas
Indianapolis, Ind.
Jersey City, N. J.
Kansas City, Mo.-Kans.
Los Angeles-Long Beach, Calif.

Louisville, Ky.-Ind.
Memphis, Tenn.-Ark.
Miami, Fla.
Milwaukee, Wis.
Minneapolis-St. Paul, Minn.

New Orleans, La.
New York, N. Y.
Newark, N. J.
Norfolk-Portsmouth, Va.
Oklahoma City, Okla.

Paterson-Clifton-Passaic, N. J.
Philadelphia, Pa.-N. J.
Phoenix, Ariz.
Pittsburgh, Pa.
Portland, Oregon-Wash.

Providence-Pawtucket-Warwick, R. I.
Rochester, N. Y.
Sacramento, Calif.
St. Louis, Mo.-Ill.
San Antonio, Texas

San Bernardino-Riverside-Ontario, Calif.
San Diego, Calif.
San Francisco-Oakland, Calif.
San Jose, Calif.
Seattle-Everett, Wash.

Syracuse, N. Y.
Tampa-St. Petersburg, Fla.
Toledo, Ohio
Washington, D. C.-Md.-Va.
Youngstown-Warren, Ohio

APPENDIX B

CITIES INCLUDED IN LARGE STANDARD METROPOLITAN AREAS AND STANDARD METROPOLITAN AREAS

Standard Metropolitan Statistical Areas

Abilene, Texas
Albany, Georgia
Albuquerque, N. Mexico
Allentown-Bethehem-Easton, Pa.-N. J.
Altoona, Pa.

Amarillo, Texas
Anderson, Ind.
Ann Arbor, Mich.
Asheville, N. C.
Atlantic City, N. J.

Augusta, Ga.-S. C.
Austin, Texas
Bakersfield, Calif.
Baton Rouge, La.
Bay City, Mich.

Beaumont-Port Arthur, Texas
Billings, Mont.
Binghamton, N. Y.-Pa.
Bloomington-Normal, Ill.
Boise City, Idaho

Bridgeport, Conn.
Brockton, Mass.
Brownsville-Harlingen-San Benito, Texas
Canton, Ohio
Cedar Rapids, Iowa

Champaign-Urbana, Ill.
Charleston, S. C.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.-Ga.

Colorado Springs, Colo
Columbia, S. C.
Columbus, Ga.-Ala.
Corpus Christi, Texas
Davenport-Rock Island-Moline, Iowa-Ill.

Decatur, Ill.
Des Moines, Iowa
Dubuque, Iowa
Duluth-Superior, Minn.-Wis.
Durham, N. C.

El Paso, Texas
Erie, Pa.
Eugene, Oreg.
Evansville, Ind.-Ky.
Fall River, Mass.

Fargo-Moorhead, N. Dak.-Minn.
Fayetteville, N. C.
Fitchburg-Leominster, Mass.
Flint, Mich.
Fort Lauderdale-Hollywood, Fla.

Fort Smith, Ark.-Okla.
Fort Wayne, Ind.
Fresno, Calif.
Gadsden, Ala.
Galveston-Texas City, Texas

Grand Rapids, Mich.
Great Falls, Mont.
Green Bay, Wis.
Greensboro-High Point, N. C.
Greenville, S. C.

Hamilton-Middletown, Ohio
Harrisburg, Pa.
Huntington-Ashland, W. Va.-Ky.-Ohio
Huntsville, Ala.
Jackson, Mich.

Jackson, Miss.
Jacksonville, Fla.
Johnstown, Pa.
Kalamazoo, Mich.
Kenosha, Wis.

Standard Metropolitan Statistical Areas (Continued)

Knoxville, Tenn.
Lafayette, La.
Lake Charles, La.
Lancaster, Pa.
Lansing, Mich.

Laredo, Texas
Las Vegas, Nev.
Lawrence-Haverhill, Mass.-N. H.
Lawton, Okla.
Lewiston-Auburn, Maine

Lexington, Ky.
Lima, Ohio
Lincoln, Nebr.
Little Rock-North Little Rock, Ark.
Lorain-Elyria, Ohio

Lowell, Mass.
Lubbock, Texas
Lynchburg, Va.
Macon, Ga.
Madison, Wis.

Manchester, N. H.
Meriden, Conn.
Midland, Texas
Mobile, Ala.
Monroe, La.

Montgomery, Ala.
Muncie, Ind.
Muskegon-Muskegon Heights, Mich.
Nashville, Tenn.
New Bedford, Mass.

New Britain, Conn.
New Haven, Conn.
New London-Gronton-Norwich, Conn.
Newport News-Hampton, Va.
Norwalk, Conn.

Odessa, Texas
Ogden, Utah
Omaha, Nebr.-Iowa
Orlando, Fla.
Oxnard-Ventura, Calif.

Pensacola, Fla.
Peoria, Ill.
Pine Bluff, Ark.
Pittsfield, Mass.
Portland, Maine

Provo-Orem, Utah
Pueblo, Colo.
Racine, Wis.
Raleigh, N. C.
Reading, Pa.

Reno, Nev.
Richmond, Va.
Roanoke, Va.
Rockford, Ill.
Saginaw, Mich.

St. Joseph, Mo.
Salem, Oreg.
Salt Lake City, Utah
San Angelo, Texas
Santa Barbara, Calif.

Savannah, Ga.
Scranton, Pa.
Shreveport, La.
Sioux City, Iowa-Nebr.
Sioux Falls, S. Dak

South Bend, Ind.
Spokane, Wash.
Springfield, Ill.
Springfield, Mo.
Springfield, Ohio

Springfield-Chicopee-Holyoke, Mass.
Stamford, Conn.
Steubenville-Weirton, Ohio-W. Va.
Stockton, Calif.
Tacoma, Wash.

Tallahassee, Fla.
Terre Haute, Ind.
Texarkana, Tex.-Ark.
Topeka, Kans.
Trenton, New Jersey

Standard Metropolitan Statistical Areas (Continued)

Tucson, Ariz.
Tulsa, Okla.
Tuscaloosa, Ala.
Tyler, Texas
Utica-Rome, N. Y.

Vallejo-Napa, Calif.
Waco, Texas
Waterbury, Conn.
Waterloo, Iowa
West Palm Beach, Fla.

Wheeling, W. Va.
Wichita, Kans.
Wichita Falls, Texas
Wilkes-Barre-Hazelton, Pa.
Wilmington, Del.-Md.

Wilmington, N. C.
Winston-Salem, N. C.
Worcester, Mass.
York, Pa.

Puerto Rico

Mayaquez
Ponce
San Juan

EA

SEP 27 1967